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ABSTRACT

This document describes the processes and procedures used by the University of Georgia Project R.O.M.E. (Results Oriented Management in Education) assessment staff during 1974-75 to produce the following products: (1) performance indicators of public school principal competencies initially developed during the 1973-74 project year, (2) a report of the results of a statewide survey utilizing practicing school principal judgments to develop a set of high-priority competency indicators, and (3) a report of the results of field testing the Georgia Principal Assessment System to validate high priority administrator competencies and performance indicators against meaningful school outcome measures. The complete Project Report comprises three volumes. This first volume contains a description of research and development activities related to the above-mentioned products. The second volume contains data appendixes to the report. A third volume contains copies of all the instrumentation utilized in field testing. (Author)

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Project R.O.M.E.

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FINAL REPORT

The Verification and Validation of Principal Competencies and Performance Indicators

Assessment Design—Procedures—Instrumentation—Field Test Results

Georgia State Department of Education/Thomas County, Georgia
College of Education, University of Georgia

1974-1975

EA 008 344

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RESULTS ORIENTED MANAGEMENT IN EDUCATION

Project R.O.M.E.

The Verification and Validation of Principal Competencies and Performance Indicators

Assessment Design--Procedures--Instrumentation--Field Test Results

VOLUME I

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TABLE OF CONTENTS

Chapter		Page
	ACKNOWLEDGEMENTS	ii
	PROJECT R.O.M.E. COMMITTEES AND STAFF	vii
	FORWARD	xi
	PREFACE	xiii
	LIST OF TABLES	xiv
	LIST OF FIGURES	xxiv
I	THE CONCEPT OF ASSESSMENT AND THE DEVELOPMENT OF PRINCIPAL COMPETENCIES AND PERFORMANCE INDICATORS	
	The Concept of Assessment	1
	Initial Development of Principal Competency Statements	2
	Derivation of Final Set of Verified Competency Statements	6
	Generation of Performance Indicators of Principals Competencies	9
	Workshops with School Principals	10
	Development of Functional Area Category Titles (FACTS)	11
	Survey to Verify Performance Indicators	13
	Purpose	13
	Data Collection Methodology and Sample	13
	Survey Results	13
	Selecting a Verified Sub-Set of Principal Performance Indicators	15
II	DEVELOPMENT OF THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM (G.P.A.S.)	
	The General Validation Paradigm	18
	The Georgia Principal Assessment System (G.P.A.S.)	20
	Input Variables: Development of Descriptive Measures of Principal Performance	24

TABLE OF CONTENTS (Con't)

Chapter		Page
	Principal Performance Description Survey - Teacher Form	26
	Principal Performance Description Survey - Student Forms	28
	Principal Performance Description Survey - Central Office Form	29
	Principal Performance Description Survey - Principal Form	29
	Principal Performance Description Survey - External Observer Form	30
	Mediating Variables: Development of Intermediate Criterion Measures	32
	The Learning Environment Inventory	33
	The My School Inventory	36
	The School Survey	37
	School Outcome Variables: Selection of Criterion Measures	39
	Georgia Statewide Achievement Test Data	40
	Average Daily Attendance	41
	Superintendent Ratings of Principal Effectiveness	42
	Field Testing Procedures	42
	Sample Schools	42
	Mechanics of Data Collection	43
III	FIELD TEST RESULTS: SUMMARIES OF DESCRIPTIVE STATISTICS FOR VARIABLES IN THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM	
	Summary of Descriptive Statistics for Input Variables	45
	Results of PPDS - Teacher Form Administration	45
	Results of PPDS - Student Forms Administration	63
	Results of PPDS - Principal Form Administration	68
	Results of PPDS - External Observer Form Administration	68
	Summary of Descriptive Statistics for Mediating Variables	74
	Elementary Students' Perception of School Climate: The My School Inventory	74
	Secondary Students' Perception of School Climate: The Learning Environment Inventory	76
	Teacher Work Satisfaction: The School Survey	78
	Summary of Descriptive Statistics for Outcome Variables	80
	Student Achievement and Average Daily Attendance Data	80

TABLE OF CONTENTS (Con't)

Chapter		Page
IV	FIELD TEST RESULTS: SUMMARY AND DISCUSSION OF VALIDATION ANALYSES AND METHODOLOGY	83
	Correlation Between PPDS - Student Form Items and Mediating Variables	86
	Relationships Between PPDS-Student Form Items and School Survey Factors	88
	Relationships Between PPDS-Student Form Items and School Climate and Learning Environment	96
	Correlation Between PPDS-Student Form Items and Outcome Data: Achievement Test Performance and School Average Daily Attendance	107
	Correlation Between PPDS-Teacher Form Items and Composites and Mediating Variables	115
	Relationships Between PPDS-Teacher Form Ratings and School Survey Factors	116
	Relationships Between PPDS-Teacher Form Ratings and School Climate and Learning Environment	132
	Correlations Between PPDS-Teacher Form Items and Composites and Outcome Data: Achievement Test Performance and School Average Daily Attendance	142
	Correlations Between PPDS-External Observer Form Product Scores and Mediating Variables	155
	Relationships Between PPDS-External Observer Form Product Scores and School Survey Factors	156
	Relationships Between PPDS-External Observer Form Product Scores and School Climate and Learning Environment	164
	Correlation Between PPDS-External Observer Form Product Scores and Outcome Data: Achievement Test Performances and School Average Daily Attendance	170
	Correlations Between PPDS-Principal Form Items and Composites and Mediating Variables	175
	Relationships Between PPDS-Principal Form Rating and School Survey Factors	176
	Relationships Between PPDS-Principal Form Items and School Climate and Learning Environment	192

TABLE OF CONTENTS (Con't)

Chapter		Page
	Correlation Between PPDS-Principal Form Items and Composites and Outcome Variables: Achievement Test Performances and School Average Daily Attendance	200
	Correlation Between Mediating and Outcome Variables	210
	Relationships Between School Survey Factors and Student Achievement and Average Daily Attendance	210
	Relationships Between the My School and Learning Environment Inventory and Student Achievement and Average Daily Attendance	215
	Supplemental Analyses: Intercorrelations Within Classes of Variables in the Georgia Principal Assessment System	219
	Relationships Between Input Variables: Various Principal Performance Description Survey (PPDS) Forms	219
	Relationships Between Mediating Variables: School Survey My School and Learning Environment Inventory	234
	Relationships Between Outcome Variables: Student Achievement Test Performance and School Average Daily Attendance	238
IV	CONCLUSIONS AND IMPLICATIONS	239
	References	250

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FORWARD

Competency-based education and performance-based certification are perhaps two of the most important trends in education today. While teacher training institutions and state departments continue to apply competency-based concepts in the preparation and certification of teachers, little has been accomplished in the area of educational administration.

One major effort pursuing the application of competency-based concepts to public school principals is Project R.O.M.E. (Results Oriented Management in Education) -- a second year ESEA Title III research and development program supported by the Thomas County School System, Thomasville, Georgia, and the Georgia State Department of Education. Initiated by Thomas County during the Spring of 1973 as part of an ongoing Management By Objectives System, Project R.O.M.E. has been actively concerned with identifying and developing competencies for building level administrators. Thomas County personnel selected the University of Georgia Department of Educational Administration to direct the project, the initial phase of which began in November, 1973. Since that time, school principals and Central Office personnel representing the Thomas County, Georgia School System, a committee from the Georgia Teacher Education Council, and the Georgia Department of Education, Division of Program and Staff Development, have worked with University of Georgia staff in implementing Project R.O.M.E. goals.

During the 1973 - 1974 project year, major activities were concentrated in three areas: 1) the development of a list of competencies for

building level administrators classified by functional areas of responsibility, 2) the development of a prototype instructional module, and 3) the development of an administrative assessment system for public school principals. These activities are described in six documents produced during the first phase of Project R.O.M.E. (through August 31, 1974). These include:

1. Competencies for Building Level Administrators
2. The Assessment of Principal Competencies: System Design--Procedures--Field Test Results
3. Building Level Administrator Competency Development Module, title: Planning
4. Identification and Development of Competencies of Building Level Administrators of Thomas County, Georgia: A Project Report
5. A Handbook for Identifying and Developing Competencies of Building Level Administrators
6. Projected Development, Refinement and Assessment of Building Level Administrator Competencies: A Plan for Administrators

The major emphasis in Project R.O.M.E. during this second year has been placed on the continued refinement and development of an administrative assessment system applicable to public school principals; continued verification of the essentiality of competencies and performance indicators developed during the first year; and the validation of selected competencies and performance indicators against meaningful school outcome measures through large scale field-testing of the assessment system. This document and and two accompanying appendices describe the results of these activities as performed by the University of Georgia Project R.O.M.E. Assessment staff during the 1974 - 1975 project year.

PREFACE

This document describes the processes and procedures used by the University of Georgia Project R.O.M.E. Assessment staff during 1974 - 1975 to produce the following products: 1) performance indicators of public school principal competencies initially developed during the 1973 - 1974 project year; 2) a report of the results of a statewide survey utilizing practicing school principal judgments to develop a set of high-priority competency indicators; and 3) a report of the results of field-testing the Georgia Principal Assessment System (developed as part of Project R.O.M.E. - Results Oriented Management in Education) to validate high-priority administrator competencies and performance indicators against meaningful school outcome measures. The complete Project Report comprises three volumes. The first volume contains a description of research and development activities related to the above mentioned products. The second volume contains data appendices to the Report. A third volume contains copies of all the instrumentation utilized in field-testing.

LIST OF TABLES

TABLE NUMBER	TITLE	PAGE NUMBER
1	Summary Classification of I.O.M.E. Principal Competency statements by Area of Responsibility and Administrative Operation	8
2	A Summary of Indicators Generated by Functional Area of Responsibility and Area of Administrative Operation for Eighty FACTS	12
3	Summary of Indicators Meeting Verification Survey Selection Criteria Classified by Functional Area of Responsibility and Administrative Operation	17
4	Variables and Data Sources in the Interactive Georgia Principal Assessment System	21
5	Frequency Distribution of Indicators (Items) Classified by Data Source	27
6	Summary of Means and Standard Deviations for Ratings of "Curriculum/Instruction" Competency Indicators Derived From Principal Performance Description Survey - Teacher Form	46
7	Summary of Means and Standard Deviations for Ratings of "Staff Personnel" Competency Indicators from the Principal Performance Description Survey - Teacher Form	50
8	Summary of Composite School Means and Standard Deviations for Ratings of "Student Personnel" Competency Indicators from the Principal Performance Descriptive Survey - Teacher Form	54
9	Summary of Means and Standard Deviations for Ratings of "School-Community Interface" Competency Indicators from the Principal Performance Description Survey - Teacher Form	56
10	Summary of Means and Standard Deviations for Ratings of "Fiscal Management" Competency Indicators from the Principal Performance Description Survey - Teacher Form	57
11	Summary of Means and Standard Deviations for Ratings of "System-Wide Policies and Operations" Competency Indicators from the Principal Performance Description Survey - Teacher Form	59
12	Summary of Composite School Means for FREQUENCY Ratings of Sub-Scores from the Principal Performance Description Survey - Teacher Form	61

LIST OF TABLES (Con't)

TABLE NUMBER	TITLE	PAGE NUMBER
13	Summary of Composite School Means for EFFECTIVENESS Ratings of Content Sub-Scores from the Principal Performance Description Survey - Teacher Form	62
14	Summary of Composite School Means and Standard Deviations for Elementary Grade Student Ratings of Frequency of Occurrence and Effectiveness of Performance for Selected Principal Competency Indicators	64
15	Summary of Composite School Means and Standard Deviations for Combined Eighth and Eleventh Grade Student Ratings of Frequency of Occurrence and Effectiveness of Performance for Selected Principal Competency Indicators	66
16	Summary of Composite Means and Standard Deviations for Effectiveness Ratings of Sub-Scores from the Principal Performance Description Survey - Principal Form	69
17	Summary of Composite Means and Standard Deviations for Frequency Ratings of Sub-Scores from the Principal Performance Description Survey - Principal Form	70
18	Summary of Composite Means and Standard Deviations for Product Scores Derived from External Observation Instrument	73
19	Summary of Composite School Means and Standard Deviations for the Five Dimensions of the My School Inventory Administered to Elementary Students	75
20	Summary of Composite School Means and Standard Deviations for the Fifteen Dimensions of the Learning Environment Inventory Administered to Combined Eighth and Eleventh Grade Students	77
21	Summary of Means and Standard Deviations for the Dimensions of the School Survey (Total Sample)	79
22	Summary of Means and Standard Deviations of Student Outcome Criterion Data	81
23	Frequency of PPDS - Student Form Items Significantly Correlated ($p < .05$) with School Survey Factors	89
24	Intercorrelation between PPDS - Student Form Items (Frequency Rating) and School Survey Factors (Elementary)	91

LIST OF TABLES (Con't)

TABLE NUMBER	TITLE	PAGE NUMBER
25	Intercorrelation Between PPDS - Student Form Items (Effectiveness Ratings) and School Survey Factors (Elementary)	92
26	Intercorrelation Between Secondary Student PPDS Items (How Often) and School Survey Factors	94
27	Intercorrelations Between Secondary Student PPDS Items (How Well) and School Survey Factors	95
28	Frequency of PPDS - Student Form Items Significantly Correlated with My School Inventory Factors (Elementary)	97
29	Frequency of PPDS - Student Form Items Significantly Correlated with Learning Environment Inventory Factors (Secondary Schools)	99
30	Intercorrelation between PPDS - Student Form Items (Frequency and Effectiveness Ratings) and My School Factors (Elementary Schools)	100
31	Intercorrelation Between PPDS - Student Form Items (How Often) and Learning Environment Inventory Factors (Secondary)	102
32	Intercorrelations Between PPDS - Student Form Items (How Well) and Learning Environment Inventory Factors	103
33	Frequency of PPDS - Student Form Items Significantly Correlated with Iowa Tests of Basic Skills Scores and Average Daily Attendance (Elementary Schools)	108
34	Frequency of PPDS - Student Form Items Significantly Correlated with Reading and Math Sub-Tests of the Tests of Academic Progress and Average Daily Attendance (Secondary Schools)	109
35	Intercorrelations Between PPDS - Student Form Items (Frequency Rating) and Student Achievement and Average Daily Attendance (Elementary Schools)	111
36	Intercorrelations Between PPDS - Student Form Items (Effectiveness Ratings) and Student Achievement and Average Daily Attendance (Elementary Schools)	112
37	Intercorrelations Between PPDS - Student Form Items (How Often and How Well) and Student Achievement and Average Daily Attendance (Secondary Schools)	114

LIST OF TABLES (Con't)

TABLE NUMBER	TITLE	PAGE NUMBER
38	Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with School Survey Factors (Elementary Schools)	118
39	Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with School Survey Factors (Secondary Schools)	119
40	Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with School Survey Factors and Average Daily Attendance (Total Schools)	121
41	Intercorrelations Between PPDS - Teacher Form Composites Functional Areas of Responsibility (Frequency and Effectiveness Ratings) and School Survey Factors (Elementary Schools)	123
42	Intercorrelations Between PPDS - Teacher Form Composite Administrative Operations (Frequency and Effectiveness Ratings) and School Survey Factors (Elementary Schools)	124
43	Intercorrelations Between PPDS - Teacher Form Composites by Functional Areas of Responsibility (Frequency and Effectiveness Ratings) and School Survey Factors (Secondary Schools)	126
44	Intercorrelations Between PPDS -Teacher Form Composites by Administrative Operation (Frequency and Effectiveness Ratings) and School Survey Factors (Secondary Schools)	127
45	Intercorrelations Between PPDS - Teacher Form Composites (Frequency and Effectiveness Ratings) by Functional Area of Responsibility and School Survey Factors and Average Daily Attendance (Total Schools)	130
46	Intercorrelation Between PPDS - Teacher Form Composites (Frequency and Effectiveness Ratings) by Administrative Operations and School Survey Factors and Average Daily Attendance (Total Schools)	131
47	Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with My School Factors (Elementary Schools)	134
48	Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with Learning Environment Inventory Factors (Secondary Schools)	135

LIST OF TABLES (Con't)

TABLE NUMBER	TITLE	PAGE NUMBER
49	Intercorrelation Between PPDS - Teacher Form Composites by Functional Areas of Responsibility (Frequency and Effectiveness Ratings) and My School Factors (Elementary)	137
50	Intercorrelation Between PPDS - Teacher Form Composites by Administrative Operation (Frequency and Effectiveness) and My School Factors (Elementary Schools)	138
51	Intercorrelation Between PPDS - Teacher Form Composites by Functional Areas of Responsibility (Frequency and Effectiveness (Ratings) and Learning Environment Inventory Factors (Secondary Schools)	140
52	Intercorrelation Between PPDS - Teacher Form Composites by Administrative Operations (Frequency and Effectiveness Ratings) and Learning Environment Inventory Factors (Secondary Schools)	141
53	Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with Student Achievement and Average Daily Attendance (Elementary Schools)	143
54	Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with Student Achievement and Average Daily Attendance (Secondary Schools)	145
55	Intercorrelation Between PPDS - Teacher Form Composites (Frequency and Effectiveness Ratings) and Average Daily Attendance (Total Schools)	147
56	Intercorrelation Between PPDS - Teacher Form Composites by Functional Areas of Responsibility (Frequency and Effectiveness Ratings) and Student Achievement and Average Daily Attendance (Elementary Schools)	149
57	Intercorrelation Between PPDS - Teacher Form Composites by Administrative Operations (Frequency and Effectiveness Ratings) and Student Achievement and Average Daily Attendance (Elementary Schools)	150
58	Intercorrelations Between PPDS - Teacher Form Composites by Functional Area of Responsibility (Frequency and Effectiveness) and Reading and Math Sub-Test Scores from the Test of Academic Progress and Average Daily Attendance (Secondary)	152

LIST OF TABLES

TABLE NUMBER	TITLE	PAGE NUMBER
59	Intercorrelations Between PPDS - Teacher Form Composites by Administrative Operation (Frequency and Effectiveness) and Reading and Math Sub-Test Scores from the Tests of Academic Progress and Average Daily Attendance (Secondary)	153
60	Frequency of PPDS - External Observer Form Items Significantly Correlated with School Survey Factors (Elementary Schools)	157
61	Frequency of PPDS - External Observer Form Items Significantly Correlated with School Survey Factors (Secondary Schools)	158
62	Frequency of PPDS - External Observer Form Items Significantly Correlated with School Survey Factors and Average Daily Attendance (Total Schools)	159
63	Intercorrelation Between PPDS - External Observer Form Composites (Product Scores) and School Survey Factors (Elementary Schools)	161
64	Intercorrelation Between PPDS - External Observer Form Composites (Product Scores) and School Survey Factors (Elementary Schools)	162
65	Intercorrelation Between PPDS - External Observer Form Composites (Product Scores) and School Survey Factors and Average Daily Attendance (Total Schools)	163
66	Frequency of PPDS - External Observer Form Items Significantly Correlated with My School Inventory Factors (Elementary Schools)	166
67	Frequency of PPDS - External Observer Form Items Significantly Correlated with Learning Environment Inventory Factors (Secondary Schools)	167
68	Intercorrelation Between PPDS - External Observer Form Composites (Product Scores) and My School Inventory Factors (Elementary Schools)	168
69	Intercorrelation Between PPDS - External Observer Form Composites (Product Scores) and Learning Environment Inventory Factors (Secondary Schools)	169
70	Frequency of PPDS - External Observer Form Items Significantly Correlated with Student Achievement and Average Daily Attendance	171

LIST OF TABLES

TABLE NUMBER	TITLE	PAGE NUMBER
71	Intercorrelation Between PPDS - External Observer Form (Product Scores) and Student Achievement and Average Daily Attendance (Elementary Schools)	173
72	Intercorrelation Between PPDS - External Observer Form (Product Scores) and Student Achievement and Average Daily Attendance (Secondary Schools)	174
73	Frequency of PPDS - Principal Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with School Survey Factors (Elementary Schools)	177
74	Frequency of PPDS - Principal Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with School Survey Factors (Secondary Schools)	179
75	Frequency of PPDS-Principal Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with School Survey Factors and Average Daily Attendance (Total Schools)	181
76	Intercorrelation Between PPDS - Principal Form Composites (Frequency Rating) and School Survey Factors (Elementary)	183
77	Intercorrelation Between PPDS - Principal Form Composites (Effectiveness Rating) and School Survey Factors (Elementary Schools)	184
78	Intercorrelation Between PPDS - Principal Form Composites (Frequency Rating) and School Survey Factors (Secondary Schools)	186
79	Intercorrelation Between PPDS - Principal Form Composites (Effectiveness Rating) and School Survey Factors (Secondary Schools)	187
80	Intercorrelation Between PPDS - Principal Form Composites (Frequency Rating) and School Survey Factors and Average Daily Attendance (Total Schools)	190
81	Intercorrelation Between PPDS - Principal Form Composites (Effectiveness Ratings) and School Survey Factors and Average Daily Attendance (Total Schools)	191
82	Frequency of PPDS - Principal Form Items Significantly Correlated with My School Inventory Factors (Elementary Schools)	193

LIST OF TABLES

TABLE NUMBER	TITLE	PAGE NUMBER
83	Intercorrelation Between PPDS - Principal Form Composites (Frequency and Effectiveness Ratings) and My School Factors (Elementary Schools)	195
84	Frequency of PPDS - Principal Form Items Significantly Correlated with Learning Environment Inventory Factors (Secondary Schools)	196
85	Intercorrelation Between PPDS - Principal Form Composites (Frequency Rating) and Learning Environment Inventory Factor (Secondary Schools)	198
86	Intercorrelation Between PPDS - Principal Form Composites (Effectiveness Rating) and Learning Environment Inventory Factors (Secondary Schools)	199
87	Frequency of PPDS - Principal Form Items (Frequency and Effectiveness Ratings) Significantly Correlated with Student Achievement and Average Daily Attendance (Elementary Schools)	201
88	Frequency of PPDS - Principal Form Items (Frequency and Effectiveness Ratings) Signficantly Correlated with Student Achievement and Average Daily Attendance (Secondary Schools)	202
89	Intercorrelation Between PPDS - Principal Form Composites (Frequency Rating) and Student Achievement and Average Daily Attendance (Elementary Schools)	204
90	Intercorrelation Between PPDS - Principal Form Composites (Effectiveness Rating) and Student Achievement and Average Daily Attendance (Elementary Schools)	205
91	Intercorrelation Between PPDS - Principal Form Composites (Frequency Rating) and Student Achievement and Average Daily Attendance (Secondary Schools)	207
92	Intercorrelation Between PPDS - Principal Form Composites (Effectiveness Rating) and Student Achievement and Average Daily Attendance (Secondary Schools)	208
93	Intercorrelation Between School Survey Factors (Teacher Satisfaction) and Student Achievement and Average Daily Attendance (Elementary Schools)	211
94	Intercorrelation Between School Survey Factors and Student Achievement and Average Daily Attendance (Secondary Schools)	212

LIST OF TABLES

TABLE NUMBER	TITLE	PAGE NUMBER
95	Correlation Between School Survey Factors (Teacher Satisfaction) and Average Daily Attendance (Total Schools)	214
96	Intercorrelation Between My School Factors and Student Achievement and Average Daily Attendance (Elementary)	216
97	Intercorrelation Between Secondary Student Achievement and Average Daily Attendance and Learning Environment Inventory Factors (Secondary Schools)	217
98	Frequency of Significant Correlations Between PPDS - External Observer Form Composites (Product Scores) and PPDS - Teacher Form Items (Total Schools)	221
99	Intercorrelation Between PPDS - Student Form Items (Frequency Rating) and PPDS - Principal Form Composites (Frequency Rating) (Elementary Schools)	224
100	Intercorrelation Between PPDS - Student Form Items (Frequency Rating) and PPDS - Principal Form Composites (Effectiveness Rating) (Elementary Schools)	225
101	Intercorrelation Between PPDS - Student Form Items (Effectiveness Rating) and PPDS - Principal Form Composites (Effectiveness Rating)(Elementary Schools)	226
102	Intercorrelation Between PPDS - Student Form Items (Effectiveness Rating) and PPDS - Principal Form Composites (Frequency Rating) (Elementary Schools)	227
103	Intercorrelation Between PPDS - Student Form Items (Frequency Rating) and PPDS - Principal Form Composites (Frequency Rating)(Secondary Schools)	229
104	Intercorrelation Between PPDS - Student Form Items (Frequency Rating) and PPDS - Principal Form Composites (Effectiveness Rating)(Secondary Schools)	230
105	Intercorrelation Between PPDS - Student Form Items (Effectiveness Rating) and PPDS - Principal Form Composites (Effectiveness Rating) (Secondary Schools)	231
106	Intercorrelation Between PPDS - Student Form Items (Effectiveness Rating) and PPDS - Principal Form Composites (Frequency Rating) (Secondary Schools)	232
107	Correlation Between School Survey (Teacher Satisfaction) Factors and My School (Learning Climate) Inventory Scores (Elementary Schools)	235

LIST OF TABLES

TABLE NUMBER	TITLE	PAGE NUMBER
108	Intercorrelation Between School Survey Factors and Learning Environment Inventory Factors (Secondary Schools)	237
109	Summary of Percent of PPDS Items Significantly Correlated with Mediating and Outcome Variables	240

LIST OF FIGURES

FIGURE NUMBER	TITLE	PAGE
1	The R.O.M.E. Competency Classification Model	5
2	Schematic View of Relationships Among Elements in the Georgia Principal Assessment System	23
3	Summary of Empirical Relationships Among Variables in the Georgia Principal Assessment System	245

Chapter I

THE CONCEPT OF ASSESSMENT AND THE DEVELOPMENT OF PRINCIPAL COMPETENCIES AND PERFORMANCE INDICATORS

The movement toward competency-based educational administration, and performance-based certification of school principals has at its foundation the idea that principals should be trained to do those things that cause and/or facilitate growth in various educational processes and products. No one, however, has adequately identified what these principal performances (competencies) are. Most research and development efforts to date have not gone beyond the "verification" process, where priority lists of administrative performances, knowledges and attitudes are arrived at through various ranking and consensual judgment procedures by professional administrators and/or active school principals. This lack of knowledge about critical principal performances is recognized and deplored by almost all those involved in the area of competency-based educational administration. A recent review of ongoing nationwide developments in competency-based administration by Erlandson (1975) supports the negative conclusion noted above.

There is then a need for a systematic research and development effort aimed at identifying important principal competencies through the verification process, and validating these against meaningful school outcome measures. Without such research, competency-based educational administration might well become another educational fad and fail in its attempts to answer critics who claim it is a mechanistic or reductionistic approach that does not embrace the essence of real school administration and the principalship.

One of the truisms in contemporary education is that assessment is the keystone of effective training and program evaluation. While sounding perhaps a bit trite, the statement is undoubtedly more true than false, given that training and evaluation activities are an integral part of most data-based innovations in education. Certainly, assessment activities are a vital component of any competency-based education or performance-based certification system; whether the system be developed for school guidance counselors, teachers, or building level administrators. Without ongoing assessment activities to compliment competency-based training programs and competency development efforts, decisions regarding the utility and importance of these can hardly be made.

The use of the term "assessment" in Project R.O.M.E. is similar to Bloom's (1970) analysis of systematic approaches to the description of relationships between selected task requirements, criterion behaviors, and the environment. Assessment in this sense, is distinguished from other activities such as measurement and testing; terms more generally used for evaluating teaching-learning situations. Assessment is more concerned with the totality of the educational setting, and is thus a broader and more inclusive term embracing a variety of methodologies and instrumentation relevant to educational decision-making. As applied more directly to school principals, assessment refers not only to the nature of the principal as an individual functioning in the educational setting, but also to the relationships between perceptions of principal performance and a variety of school outcome measures.

Ellis (1971) has noted that the principal is traditionally "the man in the middle." He is virtually required to be all things to all people and must assume a great variety of duties, roles, and responsibilities. While once viewed as an educational or instructional leader,

the school administrator is today, in addition, a manager, personnel director, technician, banker, public relations expert, human relations consultant, media specialist, etc. The cognitive, affective, and performance requirements for all these role conceptions are clearly extensive, and admittedly complex. These characteristics, then, must be reflected in the development of any complete administrative assessment system which purports to describe and assess principal "competence" in relation to meaningful school outcome measures.

The ultimate goal of the Georgia Principal Assessment System (G.P.A.S.) developed within Project R.O.M.E., is to formulate a set of practically administered procedures which will measure a validated set of competencies that have been demonstrated through research to be related to meaningful school outcome measures. However, the assessment of principal competencies and performances is perhaps fraught with far more problems than the many attempts to develop competency-based teacher education programs and to assess teaching effectiveness (e.g., see W. R. Houston, 1974). This can be exemplified by considering one of the major goals of education: student learning. The teacher at least has continuous, direct contact with students, whereas the local building level administrator (principal) is one step removed from the student academic situation, usually working through the teacher to hopefully influence the student. Thus, the behavior of an ideally "competent" administrator may be, at best, only indirectly related to students' academic performances.

The G.P.A.S. assumes, however, that assessments of principal performance can be more directly related to a variety of other school processes and products. In addition, the concept of competency as used to date in Project R.O.M.E. does not imply a closed system, or an all or

none state of affairs. A particular principal may be more or less competent in some areas of administrative responsibility than in others, and demonstrate competencies through a variety of performances. If Ellis's (1971) conception of the principal's job is correct, then where does the assessment of a principal's competence begin?

Initial Development of Principal Competency Statements

During the 1973 - 1974 Project R.O.M.E. year, project staff at the University of Georgia identified approximately 3,600 to 4,000 statements of principal competencies, duties, roles, functions, and responsibilities, through objective-based workshops with principals, time-motion studies, tasks operationalizing key educational goals for Georgia, and professional literature reviews. Using a classification model developed within the project (See Figure 1), divided into seven Functional Areas of Responsibility (Curriculum/Instruction, Staff/Personnel, Student/Personnel, Support-Management, School-Community Interface, Fiscal Management, System-Wide Policies and Operations) and six Administrative Operations (Collecting Information, Planning, Decision-Making, Communicating, Implementing, Evaluating), and a system for grammatically structuring competencies into performance statements so as to eliminate redundance and maintain broad content, this larger list was reduced to a more manageable and meaningful set of 306 competencies.

Once these competencies were abstracted and synthesized from various professional sources, and classified within the R.O.M.E. Competency Classification Model (RCCM), they were subjected to the aforementioned process referred to as "verification." Assessment personnel conducted a statewide survey in Georgia using four critical judging groups:

PROJECT R.O.M.E.

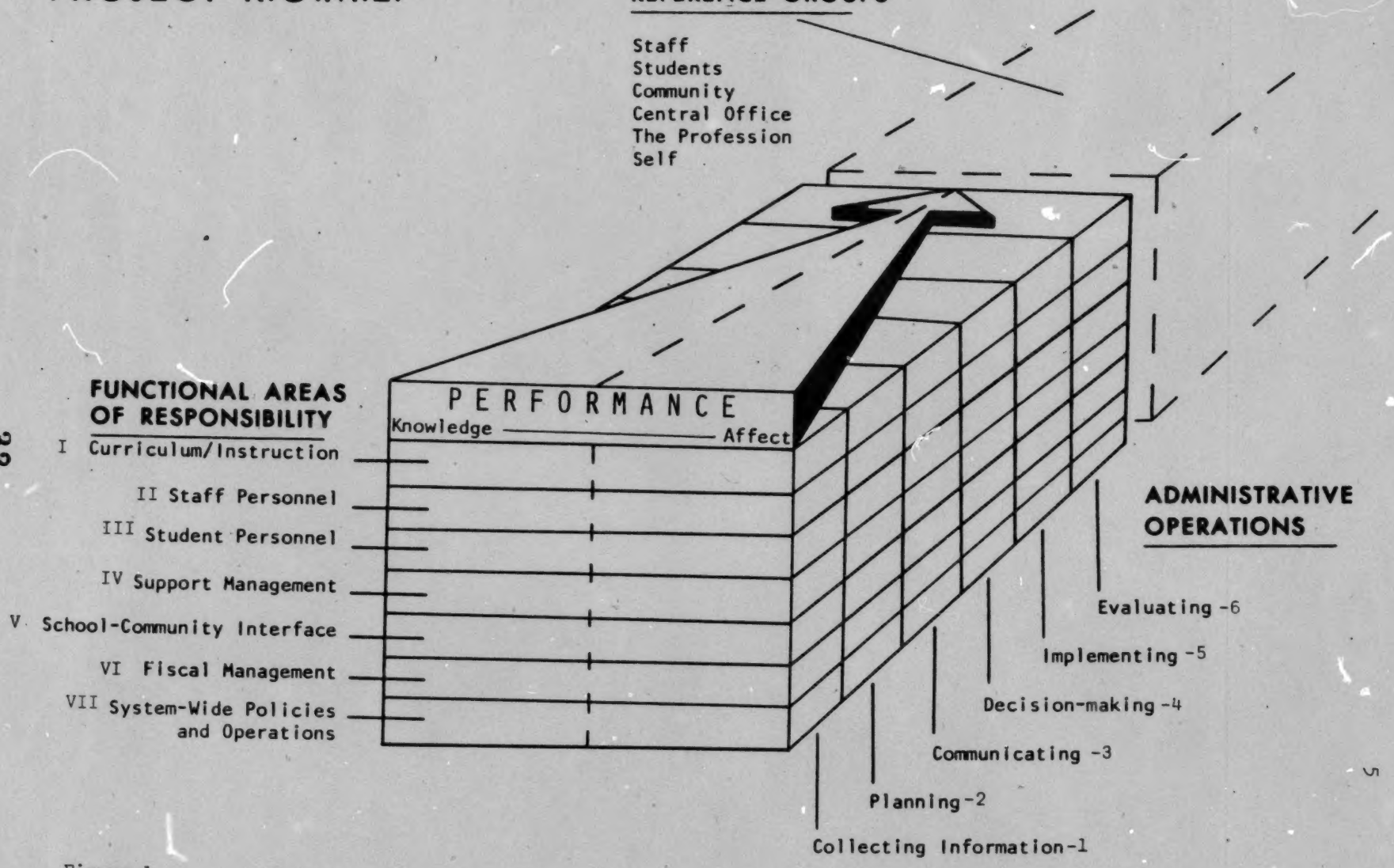

Figure 1.

MODEL FOR CLASSIFYING COMPETENCIES OF SCHOOL LEVEL ADMINISTRATORS

University/College Experts in Competency-Based Education, State Department of Education Personnel, and two groups of school principals, one judged as operating exemplary programs in selected Functional Areas, the other judged as operating non-exemplary programs in selected Functional Areas. These persons were asked to provide judgments about the 306 competency statements in terms of their Importance and Frequency of Use in an "optimally functioning" school program. These data served to further reduce the set of 306 competencies to a more generic set of 46 statements, and to verify their professional importance for practicing school administrators.

Derivation of Final Set of Verified Competency Statements

One of the major products at the end of the 1973 - 1974 year of operation of Project R.O.M.E. was a list of 46 verified competency statements. As mentioned above, from a pool of 306 competencies, these 46 had been judged by groups of Superintendents, University/College faculty members in Departments of Administration, staff members in the Georgia State Department of Education, and two subgroups of principals (Types A and B)[1] to be "frequently important." The criterion for selection of this set of 46 statements had been arbitrarily set at a mean rating of 8.65 or higher on an 11-point scale based on the combined ratings of all five surveyed.

After publication of the 1973 - 1974 Final Report for Project R.O.M.E., in which the development and selection of the 46 competency statements was discussed, the assessment staff again reviewed the ratings collected

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[1] Type A principals were identified and judged by a Georgia State Department of Education professional, who was intimately knowledgeable about each principal, to evidence relatively greater effectiveness in given functional areas of responsibility than were Type B principals.

for the 306 statements. New selection criteria were generated which attempted to: 1) be more responsive to all five judging samples in the survey, 2) allow for the inclusion of additional competency statements which, although not as highly rated as those previously selected, might prove predictive of school outcomes, and 3) provide a more comprehensive picture of the principal's day-to-day activities and responsibilities.

The decision was made that in order for a competency statement to be included in the final verified set it would have to meet the following criteria:

1. An overall rating for the five judging samples of 9.00 or higher on the 11-point scale (combined mean total).

   or

2. A rating of 8.50 by Type A principals, a difference of 2.00 or more between Type A and B principals (with Type A higher than Type B), and a combined total mean for all five groups of 7.00 or above.

   or

3. A rating of 9.00 or above for each of the Type A and B principal groups, and a combined total mean for all five groups of 7.00 or above.

A list of the 80 competency statements selected using these criteria for inclusion in the final set is given in Appendix A of the Data Appendix Volume.

A summary classification of the number of competency statements selected is presented in Table 1. The classification is by Functional Area of Responsibility (a content category) and Administrative Operation (a process category). Several interesting trends can be noted in the data.

TABLE 1

SUMMARY CLASSIFICATION OF R.O.M.E. PRINCIPAL COMPETENCY STATEMENTS BY AREA OF RESPONSIBILITY AND ADMINISTRATIVE OPERATION

Functional Area of Responsibility	Total # of Item Statem.	# of Statem. Meeting Rating Criteria	% of Area Total	% of Total Selected	Number of Competency Statements In Each Administrative Operation Area: Collecting Information	Planning	Communicating	Decision Making	Implementing	Evaluating
Curriculum/ Instruction	44	21	48%	26%	1	12	--	--	4	4
Staff Personnel	77	14	18%	18%	1	3	6	1	3	--
Student Personnel	36	19	53%	24%	2	8	2	--	5	2
Support Management	43	2	5%	3%	--	--	1	--	1	--
School-Community Interface	42	1	2%	1%	--	1	--	--	--	--
Fiscal Management	31	12	38%	15%	--	1	3	1	7	--
System-Wide Policies and Operations	32	11	34%	14%	2	2	4	--	3	--
TOTALS	306	80	26%		6	27	16	2	23	6
				Percent of Total Selected	8%	34%	20%	3%	39%	8%
				Total No. In AO Area	17	101	77	6	79	26
				Percent of Total in AO Area	35%	27%	21%	21%	33%	23%

The extremely small number of statements selected in the Functional Areas of Responsibility of Support Management and School-Community Interface is a somewhat surprising finding. On the other hand, the heavy weighting of Student Personnel items was as expected. If one were to analyze a work log for a busy principal it is doubtful that one would find a large proportion of time being given over to activities in the general area of curriculum and instruction.[1] Yet 48% of these competencies were judged as being frequently important.

With regard to the Administrative Operation area the distribution of competencies is fairly even when considering the total possible in the operations area. With regard to the total 80 selected, however, some discrepancies are noted. The areas of Data Collecting, Decision-Making, and Evaluating might be considered by some as being under-represented.

GENERATION OF PERFORMANCE INDICATORS OF PRINCIPAL COMPETENCIES

It is obvious from even a brief perusual of the 80 competency statements (see Appendix A) that the skills involved are too broadly defined to be of any great help in developing measuring instruments. If the assessment staff was to be successful in gathering evidence of effective principal performance of competencies, performance indicators further operationalizing each competency had to be generated. Going through this process helped to (1) clarify the specific dimensions of each competency, and (2) generate performance statements to be used in instrument development.

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[1] Data resulting from a 1973-1974 time-motion study of six school principals for an entire work week seemingly corroborate this assumption.

Workshops with School Principals

To provide information from practicing school principals, thirty-two principals from three South Georgia counties assisted in the task of generating performance indicators. Four staff members from the Project R.O.M.E. assessment team met with eight small principal groups over a two day period. The 80 competency statements were randomly divided into four sets with each set of 20 statements being presented to two different groups. The role of the staff member was that of recording secretary and/or facilitator of group interaction. The group task was simply to describe what behavior a principal would exhibit in order to perform or operationalize a given competency, i.e., to describe what the principal does when he plans, makes a decision, implements, etc.

A large variety of responses were gathered resulting in approximately 1110 raw indicator statements for the 80 competencies. These statements were culled by assessment personnel for duplications and ambiguous phrasings. Approximately 350 statements classified by Functional Area of Responsibility and Administrative Operation remained after the quite lengthy editing task.

Development of Functional Area Category Titles (FACTS) and Additional Indicators

It was evident from the results of the workshop that much confusion was introduced by having the "operational" term included in the competency statement. It was difficult, for example, for principals to describe performance indicators adequately discriminating between and reflecting the administrative operation dimension of a particular competency statement. To clarify this problem, and to allow the variety of operational terms to "fall out naturally," the behavioral term in each of the original

80 competency statements was deleted. This process resulted in a set of 80 phrases (sounding more like traditional role descriptions) classified according to Functional Areas of Administrative Responsibility, and renamed Functional Area Category Titles (F.A.C.T.s). This revised set of statements appears in Appendix B of the Data Appendices Volume of this report. To classify indicator statements, it was decided to include the behavioral or "operation" term in writing each indicator, and to develop at least one performance statement for each administrative operation (e.g., data collection, planning, implementing, etc.) listed under each of the 80 F.A.C.T.s.

After classifying indicators generated from the principal workshop, project staff generated additional indicator statements so that each operation enumerated under each F.A.C.T. had at least one indicator statement. These efforts resulted in a classified list of 885 indicator statements reflecting various operations subsumed under each of the 80 F.A.C.T. phrases. A listing of these 885 indicator statements classified by F.A.C.T. and operation is included in the Data Appendix Volume. It is obvious that some F.A.C.T.s subsumed more indicators than others, however, each F.A.C.T. had a minimum of six indicators, at least one for each Administrative Operation.

A matrix summarizing the number of indicator statements classified by Functional Area of Responsibility and Administrative Operation is presented in Table 2. The disproportionate representation of certain cells in Table 2 reflects the emphasis placed on particular operations by principals when generating performance indicators for the 80 competency statements, as well as the classification of statements resulting from the initial verification survey (see Table 1).

TABLE 2

A Summary of Indicators Generated by Functional Area of Responsibility and Area of Administrative Operation for Eighty FACTS

FUNCTIONAL AREA OF RESPONSIBILITY	Administrative Operation: Data Collecting	Planning	Communicating	Decision Making	Implementing	Evaluating	Row Sums	$\bar{X}$	% of Table Total
Curriculum/ Instruction	46	44	46	22	53	26	237	39.50	27.0
Staff Personnel	25	26	39	15	39	16	160	26.67	18.1
Pupil Personnel	37	47	52	21	48	30	235	39.17	26.5
Support Management	2	4	6	2	5	3	22	3.67	2.3
School-Community Interface	1	2	7	2	5	1	118	3.00	2.0
Fiscal Management	13	17	28	15	30	14	117	19.50	13.2
System-Wide Policies and Operations	18	13	22	15	15	13	96	16.00	10.8
Column Sums	142	153	200	92	195	103	885		
$\bar{X}$	20.29	21.86	28.57	13.14	27.86	14.71			
% of Table Total	16.04	17.29	22.60	10.40	22.03	11.64			

Survey to Verify Performance Indicators

Purpose

Having developed 885 performance indicators classified by six administrative operations subsumed under 80 F.A.C.T.s, a statewide survey of practicing school principals was undertaken in order to prioritize and reduce this large number to a more manageable sum for field testing purposes. Due to budgeting and severe time constraints it was not feasible to develop instrumentation for all 885 indicators. In addition, it was considered impractical to develop instrumentation for an indicator unless there was some assurance of a reasonable likelihood of relationship to mediating and outcome variables within the G.P.A.S. design.

Giving thought to these considerations, the decision was made to survey a statewide sample of practicing school principals to verify the essentiality and frequency of occurrence of the developed performance indicators of principal competencies. The general purpose of the survey was to obtian judgments form active principals that would allow for the selection of indicator statements seen as highly essential and frequently occurring for the effective operation of a school program. These statements then would be validated against school outcome and mediating variables previously explicated in the G.P.A.S.

Data Collection Methodology and Sample

Judgments about the indicator statements were obtained from a wide variety of principal groupings contracted throughout the state of Georgia. Some of these came from individual school systems, some were selected from in-service groups being run by University of Georgia personnel, and some were composed of professional association members assembled at regional meetings.

Actual data collection methods ranged from group administration by project staff members, to distribution by superintendents, to mailings (with mailback return), and distribution to principal groups by staff with mailback return. Using these methods, a total of 289 usable returns, geographically representative of the state as a unit were realized. The sample represented approximately 16% of the total number of principals in Georgia.

Owing to the large number of indicator statements developed (865) and the extreme length of a judging task involving all statements, a sampling procedure was used to develop verification survey instruments. First, the 80 F.A.C.T.s were randomly assigned to eight data collection sets. Indicators within F.A.C.T.s were then randomly ordered. Finally, sets were randomly distributed to principals in the sample. This process resulted in each principal being asked to make judgments about approximately 110 indicator statements. In addition, indicator statements on each data collection instrument were judged by at least 32 principals.

Two three-point rating categories were used to assess the frequency and importance dimensions of each indicator statement. These categories were as follows:

Ideal Importance

ESSENTIAL: This category indicates that the particular principal's administrative behavior should be one required, necessary, and, in a sense, mandatory for the effective operation of a school.

HIGHLY DESIRABLE: Although very important, an indicator rated as Highly Desirable would not be an absolutely essential administrative behavior.

DESIRABLE: Desirable administrative behaviors are not necessary but may contribute to effective school operation.

Frequency of Use

The idea of Frequency of Use refers to the optimal frequency which might be used on the job in managing the school program. The categories are:

VERY OFTEN
FREQUENTLY
RARELY

Survey Results

A summary of the proportion of principals' responses to each of the three-point evaluative categories on the two dimensions, for each of the 885 indicators, can be found in Appendix C (see Data Appendix Volume). The Appendix is arranged in the order of F.A.C.T.s within Functional Areas of Responsibility. Any substantive comment on these data at this point would not be very meaningful since the intent of the survey was to identify the most valuable (from the principals' viewpoint) sub-set of indicators to be used in later field testing of the G.P.A.S.

Selecting a Verified Sub-Set of Principal Performance Indicators

To reduce the number of indicators to a manageable sum for later field testing, it was necessary to establish meaningful selection criteria. Initially, combinations of common percentages of the importance and frequency of use dimensions were established as selection criteria. However, these combinations were not used since the procedure seemed to eliminate far too many statements judged as essential, but rarely performed. In most cases, statements judged as very often performed were, in addition, seen as essential. Therefore, it was decided to select for instrument development purposes all indicators which had been judged by at least 50% of the principals surveyed as essential, as well as those indicators rated by at least 90% of the principals as either essential or highly

desirable. The indicators selected for inclusion in the assessment scheme are marked by an asterisk in Appendix C. Again, frequency of use was not included as part of the selection criteria because it seemed evident that an action might be essential to the effective operation of a school even though it was rarely performed.

A summary of the number and percentage of indicators selected by this process, categorized by Functional Area of Responsibility and Administrative Operation is presented in Table 3. Three hundred and thirty-eight indicators met the selection criteria described above. Trends both similar and dissimilar to those seen in Table 1 are evident in Table 3, with Support Management and School-Community Interface Functional Areas having received the lowest frequency of nomination as being essential and/or highly desirable in terms of a principals' on the job performance. Looking at the Administrative Operations category it can be seen that Communicating activities are again judged as being extremely important in implementing a school program. When a particular competency or set of competency statements become operationalized in the form of behavioral indicators the value assigned to them by principals will sometimes change. This can be seen by contrasting the data of Tables 1 and 3. For example, the Administrative Operations of Evaluating and Communicating increased from 8% to 32% and 3% to 44%, respectively.

TABLE 3

Summary of Indicators Meeting Verification Survey Selection Criteria
Classified by Functional Area of Responsibility and Administrative Operation[1]

Functional Area of Responsibility	Administrative Operations: Data Collection	Planning	Communicating	Decision Making	Implementing	Evaluating	Total
Curriculum and Instruction	11 (23.9)[2]	13 (29.6)	25 (54.4)	9 (40.9)	9 (17.0)	9 (34.6)	76 (33.4)
Staff Personnel	6 (24.0)	5 (19.2)	24 (61.5)	5 (33.3)	16 (41.0)	3 (18.8)	59 (33.0)
Pupil Personnel	5 (13.5)	8 (17.0)	19 (36.5)	8 (38.1)	15 (31.3)	6 (20.0)	61 (26.1)
Support Management	2 (100.0)	1 (25.0)	3 (50.0)	1 (50.0)	1 (20.0)	0 (00.0)	8 (40.8)
School Community Interface	0 (00.0)	1 (50.0)	1 (14.3)	0 (00.0)	2 (40.0)	0 (00.0)	4 (17.4)
Fiscal Management	8 (61.5)	11 (64.7)	13 (46.4)	10 (66.7)	21 (70.0)	12 (85.7)	75 (65.8)
System Wide Policies and Operations	7 (38.9)	9 (69.2)	15 (68.2)	12 (80.0)	4 (26.7)	8 (61.5)	55 (34.5)
TOTALS	39 (37.4)	48 (27.5)	100 (47.3)	45 (44.1)	68 (35.1)	38 (31.5)	338 (36.5)*

[1]Based on responses from 289 school principals in the State of Georgia
[2]Percentage of original number of classified indicators in table cell.
*Estimated table percentage owing to rounding error.

Chapter II

DEVELOPMENT OF THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM (G.P.A.S.)

The General Validation Paradigm

Those involved in the training of educational leadership personnel, especially of principals, have recognized the problems inherent in more traditional approaches to educational administration. Many have already begun to move their programs and training procedures toward performance based systems. Like teacher-educators, they need a large data base concerning the relationship between principal competencies and performance indicators and school outcome measures. From a training perspective, the most crucial need is for techniques to permit the assessment of trainee skills and for instructional procedures to provide training in those areas where the trainee's performance is considered deficient. The development of assessment strategies and procedures needed by principal-educators becomes a necessary part of a basic research paradigm to specify, verify, and validate principal competencies as explained below. These aspects of competency-based administrator assessment--the development of adequate procedures for measuring the "level" of competence along with the behavioral definition of the competency and its validation against meaningful school outcome measures--seem integral parts of the same system.

The process of defining and describing principal functions in behavioral terms was considered in Project R.O.M.E. to be the first step toward developing a comprehensive assessment system. An adequate assessment system can not be developed without a clear description of a particular competency in performance terms, assessing its perceived professional

importance (verification), developing reliable measures of school outcomes, and examining the relationship between principal performances and school outcome measures.

Performance-based approaches to the principalship thus, rest on the assumption that a causal relationship (however complex) exists between certain patterns of principal behavior (competency clusters) and specifiable school outcomes. This relationship cannot be examined at all in the absence of any definition or description of the performances to be studied. In addition, school outcomes must be measured in a meaningful and reliable manner. These two steps, as perceived within the Project R.O.M.E. validation paradigm--the development of reliable measures of principal performance and the delineation of meaningful school outcome measures--should allow for the initial examination of answers to the question: Is there a relationship between principals' assessed competence and school outcome measures? However, answering this question, as a first step in validation, does not allow for the specific determination of causal relationships. This can only be achieved through more tightly controlled experimental studies in which principal behavior is manipulated (perhaps through in-service or field-based training procedures) and the consequences of newly acquired performances in the school are assessed. The term "causal," as used here, does not imply a cause and effect relationship. It is used in a broader "impact" and "interactive" sense, where principal performances are seen as directly influencing mediational variables which in turn impact on students and school outcomes. There are sets of principal performances which concomitantly co-vary with student outcomes.

The Georgia Principal Assessment System (G.P.A.S.)

Within the general validation paradigm described above, the Georgia Principal Assessment System (G.P.A.S.) was developed to investigate initial relationships between verified principal competencies and performance indicators, important factors mediating the school learning environment, and outcome measures usually considered indicative of quality schools. Table 4 represents a delineation of variables comprising the G.P.A.S. to date, and shows their conceptual relationships, for assessment purposes, described above.

The left hand column of Table 4 represents possible data sources from which assessment information about the principal and aspects of the school program conceivably might be derived. Because of the large number and complexity of the variables involved in Project R.O.M.E. field testing during the Spring of 1975, and budgetary constraints, information from the Community, Other Staff, and Parent sources was eliminated from the assessment schema. However, these remain viable sources of school and principal information for future Project R.O.M.E. research.

Input variables in the G.P.A.S. are conceived of as information derived from various sources about a principal's perceived functioning in certain performance areas. For the field testing reported here, input information was in the form of proficiency ratings of the principal on performance statements where the rating source was considered the source most directly and logically effected by a particular principal performance. A description of the specific development of instrumentation for input variables is found later in this section of the report.

Mediating variables represented in the middle column of Table 4 represent ever present factors in the school setting that are conceived in

TABLE 4

Variables and Data Sources in the Interactive Georgia Principal Assessment System

Source	Input Variables	Mediating Variables (Intermediate Outcomes)	Outcome Variables
Teachers	Description of Principal's Performance	Satisfaction/ Climate/Attitudes	
Other Staff	Description of Principal's Performance	Satisfaction/ Climate/Attitudes	
Students	Description of Principal's Performance	Satisfaction/ Climate/Attitudes	Achievement and Average Daily Attendance
Community	Description of Principal's Performance		
Parents	Description of Principal's Performance	Attitudes Toward the School	
Central Office	Description of Principal's Performance		
External Observer	Description of Principal's Performance and Ratings of Performance Products		
Principal	Self Description Report		
Superintendent		Ratings of Principal's Effectiveness (Secondary Relevance)	Ratings of Principal's Effectiveness (Secondary Relevance)

the G.P.A.S. schema as interacting with a wide variety of principal performances to eventually produce stable school products. The assumption here is that the principal, in carrying out his many functions within the school setting, more directly influences these mediating variables than the outcome variables depicted in Column 3. The principal's interaction with teachers in the area of curriculum and instruction, for example, probably influences teacher behavior, knowledge, and attitudes in the classroom, which in turn influence classroom climate and the subsequent development of student attitudes hopefully conducive to learning.

The social context in which education takes place, as measured by students' perception of the learning environment, is known to account for significant variance in achievement. More recent development of comprehensive learning models and research reviews in this area (e.g., see Walberg, 1974) demonstrates that students' perception of the classroom climate is an important predictor of student achievement, over and above "state" or "trait" characteristics of the learner such as intelligence.

These assumptions about the relationship between variables assessed in the G.P.A.S. might be better explained schematically. Figure 2 contains a schematic representation of the relationship between principal functioning, mediating variables both within and external to the school, and long term school outcomes. As can be seen in the figure, the principal is conceptualized as both effecting and being affected by mediating variables. Even though principal performances affect changes in ongoing characteristics of the school, as explained above, the consequences of his daily interaction with parents, teachers, students, and others, undoubtedly influence his performance. Thus, the principal both changes, and is changed by others within the total school setting.

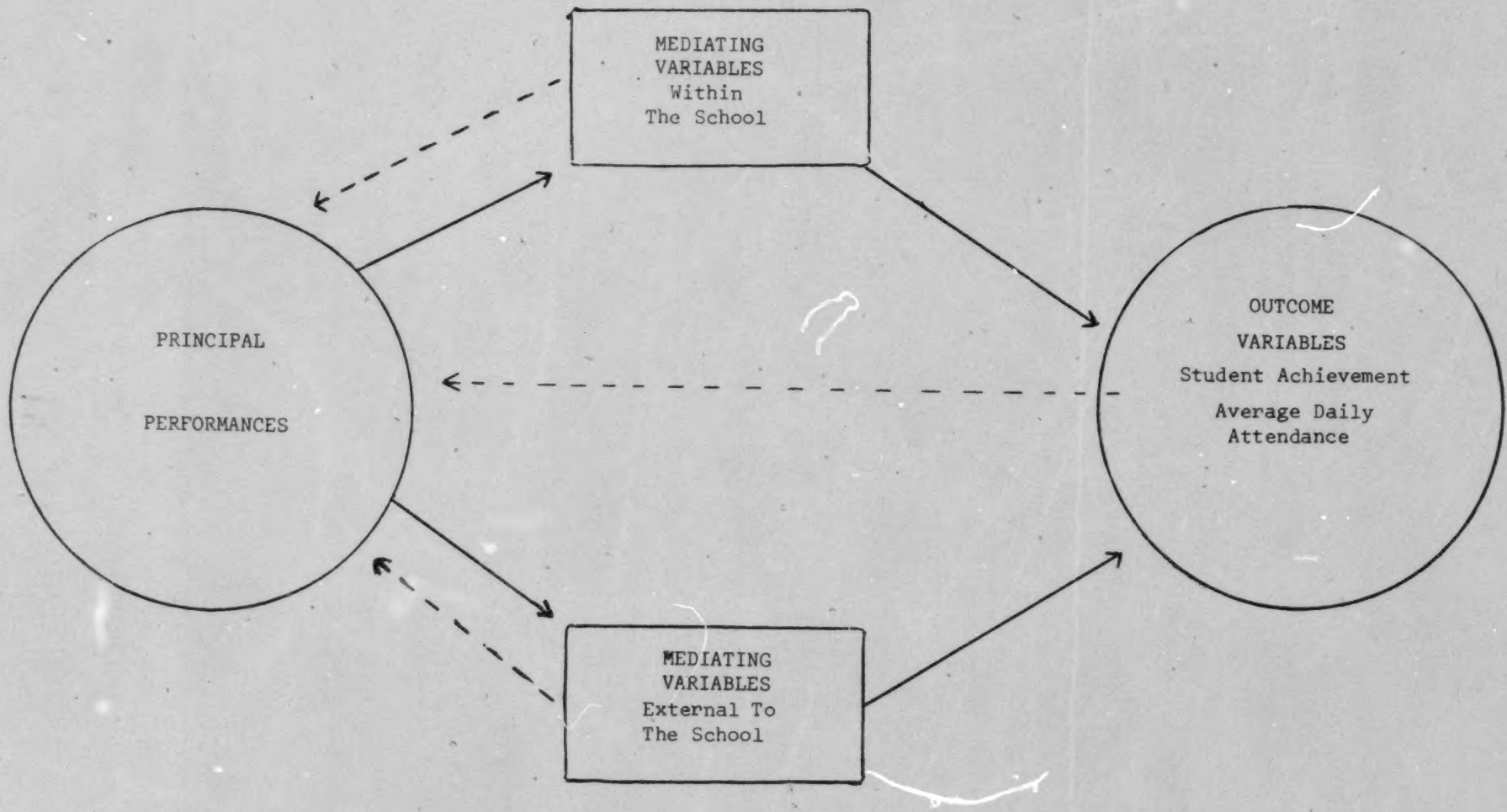

Figure 2. Schematic View of Relationships Among Elements in the Georgia Principal Assessment System*

*Solid arrows depict the principal's effect on other variables.
Dotted arrows depict the effect of other variables on the principal.

Considering elements in the G.P.A.S. hypotheses about mediating variables as predictors of student achievement, average daily attendance (ADA), and other school outcome variables can be derived. Several additional hypotheses concerning the G.P.A.S. might be derived. It might be expected, for example, that principals' assessed competence relates more strongly to school climate and teacher attitude factors within the school than to student achievement data. In addition, school climate and teacher attitude factors would be expected to correlate more strongly with student achievement and other outcome variables than assessment of principal competence.

The model allows for a comprehensive assessment and explanation of the unique manner in which principal functioning brings about school outcomes. Though complex, this model seems an adequate one for assessing school products in relationship to principal competence, since the principal's functioning within the school setting includes a wide array or roles.

Instrument packages developed to measure the relationship between input, mediating, and outcome variables can be found in the Instrument Appendix document. To assess input and mediating variables, individual instrument packages were administered to each data source. For teacher and student instrument packages, the Principal Performance Description Survey (PPDS) items followed the School Survey and LEI and My School items respectively. The discussion that follows explains in greater detail the measures of input, mediating, and outcome variables used in field testing the G.P.A.S. and the rationale for their development and administration.

Input Variables: Development of Descriptive Measures of Principal Performance

Instruments concerned with descriptions of principal behavior were developed using principal performance indicators selected from the verifi-

cation survey with principals. The statewide survey resulted in the selection of 338 high-priority performance indicators classified by Functional Area Category Titles. Working as a group, assessment staff classified these indicators according to those input sources (previously identified in Table 4.) most logically and directly effected by a particular performance. In this manner, groupings of performance statements (about which information from various sources in the form of competency ratings could be attained) were made. Consensual agreement among five staff members was the criterion for classification against which particular statements were judged.

Resulting from this process were performance statements grouped by the following sources for later instrument development: 1) teachers, 2) students, 3) central office, 4) principal, and 5) external observer. Once combined and classified according to input source, performance statements were randomly ordered within instrument packages (with the exception of the external observer package) and rating scales selected. These items, as grouped with their appropriate rating scales, were considered for assessment purposes as separate components of the Principal Performance Description Survey (PPDS). Items comprising the PPDS-Teacher, Student, External Observer, and Central Office forms were unique, in that no single item on one form was duplicated on another. The PPDS Principal form allowed the principal to rate himself on all indicator statements.

Because of the inclusion of elementary (fourth and sixth) and eighth-grade students in the assessment sample, performance indicator statements for the PPDS-Student form were modified as to language. These modifications, however, allowed for assessment of essentially the same performances indicated by the original indicator statements. Copies of

the complete set of Principal Performance Description Survey Forms used in field-testing the G.P.A.S., with accompanying instructions and rating scales, can be found in the Instrument Appendix. A summary of the number of indicators classified by source can be found in Table 5.

Principal Performance Description Survey - Teacher Form

The Principal Performance Description Survey (PPDS) administered to all teachers participating in the project consisted of 117 principal performance indicator statements selected from the verified set of 338. These items were selected specifically for teachers as a data source because they obviously described principal performances that directly related to a principal's interaction with teachers. Considering all data sources it was assumed that teachers would be most knowledgeable about, and therefore in the best position to rate the principal's functioning on these 117 items.

The PPDS for teachers allowed them to make two judgments about each principal performance statement using a five point rating scale. The first of these--FREQUENCY WITH WHICH PRINCIPAL PERFORMS TASK--allowed respondents to rate the corresponding performance indicator from 1--Never to 5--Very Often. The second judgment for the statement--EFFECTIVENESS WITH WHICH PRINCIPAL PERFORMS TASK--allowed respondents to rate the same indicator from 1--Ineffective to 5--Very Effective. Instructions directed teachers to only complete the Effectiveness scale for a particular item if the Frequency rating was greater than 1. This allowed for the assesement of principal performance effectiveness for only those items which represented observed performances. In addition, variation in principal performances between schools within a system, and between systems could be assessed. The complete PPDS--Teacher form with instructions can be found in the Instrument Appendix.

Table 5

Frequency Distribution of Indicators (Items)
Classified by Data Source

Functional Area of Responsibility	SOURCE: Principal	External Observer	Teacher	Central Office	TOTAL
1. Curriculum & Instruction	74	35	35	--	144
2. Staff Personnel	56	12	40	6	114
3. Pupil Personnel	66	29	17	3	115
4. Support Management	8	3	--	2	13
5. School Community Interface	7	3	1	--	11
6. Fiscal Management	74	44	9	15	142
7. System-Wide Policies and Operations	53	29	15	7	104
TOTAL	338	155	117	33	643
Administrative Operation					
1. Data Collecting	38	19	13	5	75
2. Planning	49	37	7	3	96
3. Communicating	101	2	74	16	193
4. Decision Making	46	42	--	2	90
5. Implementing	64	24	21	7	116
6. Evaluating	40	31	2	--	73
TOTAL	338	155	117	33	643

The 14 items on the PPDS-Student Form were not classified as to category.

Principal Performance Description Survey - Student Form

The Principal Performance Description Survey administered to students participating in field-testing consisted of verified items that described principal performance interactions with students. Students were considered the most relevant data source for only 14 of the 338 verified indicator statements. Like the teacher form, students were generally instructed to make two judgments about each performance using rating scales describing Frequency and Effectiveness dimensions.

The elementary grade version of the student PPDS allowed students to make Frequency ratings (HOW OFTEN MY PRINCIPAL DOES THINGS) for each of 14 items using a three-point scale: 1--Almost Never, 2--Sometimes, 3--Almost Always. Effectiveness ratings for each item (HOW WELL MY PRINCIPAL DOES THINGS) were obtained by allowing students to again rate each of the 14 items using a three-point rating scale: 1--Not So Well, 3--Very Well. The performance indicators selected for the elementary student PPDS necessitated alterations in language in order to be more easily interpretable by the students. In addition, the instrument was administered orally to students in a group setting as a precaution agains reading difficulty. Oral instructions administered to elementary students can be found in the Instrument Appendix.

The PPDS administered to students in Grades 8 and 11 consisted of the same items as the elementary grade PPDS form. The same type ratings for each statement were made (Frequency and Effectiveness), however, scale points varied. These students were asked to provide Frequency judgments using a four-point scale: 1--Almost Never to 4--Almost Always. Effectiveness ratings were made on a four-point scale ranging from: 1--Not Too Well to 4--Very Well.

All students were instructed to omit ratings for any particular item they had never seen their principal perform. This istruction allowed for the assessment of principal performance for only those items indicative of performances students had directly observed. In addition, this procedure allowed for a more sensitive measure of the variation between principal performances across schools as perceived by students.

Principal Performance Description Survey - Central Office Form

The PPDS administered to central office personnel consisted of 33 verified performance indicator statements judged to be appropriate for this input source. Like the PPDS items administered to teachers, central office personnel were asked to respond to only those items where Frequency ratings for a particular performance were greater than 1.

A central office PPDS for each principal participating in field testing was provided for each of four participating superintendents. In cases where the superintendent did not consider himself knowledgeable about a particular principal performance, instructions directed him to select the most appropriate central office person to provide judgements. The particular items comprising the PPDS Central Office form described the principal's functioning in relationship to the central office. The complete PPDS - Central Office Form and accompanying instructions can be found in the Instrument Appendix.

Principal Performance Description Survey - Principal Form

The PPDS - Principal Form consisted of all 338 verified performance indicator statements. Using the five-point rating scales for Frequency and Effectiveness described above, each principal was asked to provide judgments about each performance indicator for which the Frequency rating was greater than 1. The PPDS for principals thus, allowed each principal to participate

in a "self" assessment to provide data to be contrasted with other input sources.

Principal Performance Description Survey - External Observer Form

The PPDS constructed for use by an External Observer (EO) varied from other PPDS forms in terms of scale structure and general administration procedure. During the process of assigning performance statements resulting from the verification survey to appropriate data sources, project staff selected individual items for the PPDS-EO form giving consideration to two factors. First, an EO item was a performance statement for which a performance "product" should be in evidence. Secondly, EO items were performance statements about which information could be best derived from direct interaction with the principal in an interview setting.

The original structure of the PPDS EO form contained 174 indicator statements grouped by categories reflecting Functional Areas of Responsibility of the R.O.M.E. Competency Classification Model, e.g., Student Personnel, Curriculum and Instruction, etc. When pilot-tested on principals, time of administration seemed somewhat excessive, approximately two hours. Therefore, items overlapping others in terms of content were eliminated, reducing the EO PPDS to 155 items categorized in 13 sections (seven Functional Areas and six Administrative Operations). This served to reduce the average length of administration to approximately one hour and fifteen minutes.

The EO instrument was based on the underlying assumption that a principal carrying out particular performances reflected by an individual performance statement, should have on hand, or be able to identify appropriate sources having performance "products." At the very least a "product" should

be in the planning or process stage. If, for example, a principal did the following: Maintains Hot Lunch Program Data, he should be able to produce documentation for this item by showing the EO lunch program data, or identifying the person responsible for this function within the school organization who had such information on hand. Thus, principal product scale scores could be derived for a particular PPDS-EO item through the principal's personal performance or delegated responsibility for a given function.

In order to meet assessment goals and to gather information about performance indicators related to their job-relevance, the PPDS-EO Form allowed the principal to indicate whether a particular item was applicable to his functioning. Any item deemed not applicable by a principal during PPDS-EO administration was not scored by the External Observer. If a particular item was judged by the principal as applicable, all categories for the item were completed. Thus, an individual principal was assessed on only those items he judged as being "job-related." In addition, the PPDS-EO Form assessed whether a particular performance was primarily done at the system or building level. Items identified by the principal as being primarily system functions were not assessed in terms of assigning product scale scores. Similarly, in order to obtain information from the principal about the required aspects of his job, the PPDS-EO Form asked whether an individual performance was a job requirement. This allowed for some descriptive distinction between principals in terms of "going beyond what the job requires."

In deriving product scores for each indicator, the EO, using direct questioning in an interview setting, assessed whether the principal could generate observable products of a given performance item. If the principal agreed that he did, as a matter of fact do a particular performance, but at the same time could not provide any directly observable evidence, he was

given a scroe of 1 for the category INFORMAL. If, on the other hand, he produced documentation relevant to having completed a particular performance, he was given a score of four for the category PRODUCT. If the principal had on hand observable evidence relevant to a performance, but had done nothing with it, e.g., having on hand teacher evaluation forms which had never been administered, he was given a score of two for the category INPUT. If he was currently in the process of carrying out a particular performance (Designing teacher evaluation forms), but had no finalized, directly observable product, he was given a score of three for the category PROCESS. The Process score assumed the principal, in the EO's judgment, had gone beyond the Input stage. Following is a sample item from the External Observation Instrument.

Item 1. Projects budget for student activities for the entire school year.

							PRODUCT SCALE			
NA	A	System Does?		Required		Data Source	Informal	Input	Process	Product
		Yes	No	Yes	No					
—	—	—	—	—	—	———	———	———	———	———

The major data resulting from the administration of the PPDS-EO instrument derived from the four-point Product Scale. The complete PPDS-EO Form with accompanying question and scale categories can be found in the Insturment Appendix.

Mediating Variables: Development of Intermediate Criterion Measures

An intensive literature search was made by Project R.O.M.E. assessment staff to identify appropriate teacher morale and student attitude instruments for assessing variables mediating the general school environment and

a principal's functioning. After a review of pertinent, available instruments and discussions with professional consultants, the decision was made to administer the Learning Environment Inventory, LEI, (Walberg, 1974). The LEI is a measure of student perception of the school climate. The LEI was deemed suitable for students in grades 8 and 11. Owing to reading difficulty, however, elementary students were administered the My Class Inventory developed by Anderson (1973), a "reworked version of the LEI... appropriate for younger children" (Walberg, 1974, p. 87). Slight wording changes were made in this instrument to change the focus from the "class" to the "school." The instrument was renamed, My School.

To assess teacher morale and general attitudes towards multiple dimensions of the school environment, the School Survey (Coughlan, University of Chicago) was administered to teachers participating in field-testing. Individual measures of mediating variables used are described in greater detail in the following sections. Copies of each instrument with accompanying instructions can be found in the Instrument Appendix.

The Learning Environment Inventory

The Learning Environment Inventory (LEI) is an instrument designed to measure the social climate of learning of a class as perceived by students. Developmentally, it is an expansion and improvement of the older Classroom Climate Questionnaire and describes the nature of interpersonal relationships in class, as well as the structural characteristics of a class as perceived by students. The LEI has been developed to include items representing scales indicative of concepts identified through research as good predictors of learning and consistent with sound social-psychological theory.

The LEI consists of 105 statements descriptive of typical school classes and requires the student to express his agreement or disagreement with each statement on a four point scale. The 15 scales of the LEI with representative sample items are listed below:

Scales	Sample Items
1. Cohesiveness	.Members of the class are personal friends.
2. Diversity	.The class divides its efforts among several purposes.
3. Formality	.Students are asked to follow a complicated set of rules.
4. Speed	.The class has difficulty keeping up with its assigned work.
5. Environment	.The books and equipment students need or want are easily available to them in the classroom.
6. Friction	.Certain students are considered uncooperative.
7. Goal Direction	.The objectives of the class are specific.
8. Favoritism	.Only the good students are given special projects.
9. Difficulty	.Students are constantly challenged.
10. Apathy	.Members of the class don't care what the class does.
11. Democratic	.Class decisions tend to be made by all the students.
12. Cliqueness	.Certain students work only with their close friends.
13. Satisfaction	.Students are well-satisfied with the work of the class.
14. Disorganization	.The class is disorganized.
15. Competitiveness	.Students compete to see who can do the best work.

In terms of its structure, the LEI can be used to derive scores for individuals within classes, or the class mean can be used to provide an estimate of the climate profile of a class. In field-testing the G.P.A.S., the latter purpose is of most interest in terms of how variation between students attitudes in different schools relates to assessment of principal competencies and to other school outcome variables in the assessment system.

Data generated from research with the LEI in the evaluation of the Harvard Project Physics in 1969 using some 64 classes and 1048 students (Anderson, 1973), shows that test - retest reliability coefficients for the test scales vary from a low of .43 (Diversity) to a high of .73 (Friction). Coefficients of internal consistency, indicative of the degree to which items on the same scale tend to measure the same thing, vary from .54 (Diversity) to .85 (Goal Direction). The intraclass correlation, a class coefficient indicating group reliability of the LEI scales, varys from .31 (Diversity) to .92 (Disorganization).

Validity data supportive of the capability of the LEI scales to predict a variety of school outcomes stems from many studies (Anderson, 1970; Walberg & Anderson, 1968; Anderson & Walberg, 1968). In general, research shows that the subscales are predictive of learning outcomes, or other variables described as being theoretically conducive to the support of adequate learning environments. These relationships are, however, complex. The Cohesiveness scale, for example, relates to three major class and course properties. Small classes are more cohesive than are large classes particularly when the class contains fewer than 16 pupils (Wahlberg & Ahlgren, 1970). Class cohesiveness relates to learning criteria differentially depending upon the norms of the cohesive class. Cohesive classes seemingly sanction only goal-directed behavior. If the

group norm includes learning, cohesiveness contributes to increased learning. In non-learning oriented classes, cohesiveness acts against those pupils who want to learn (Anderson, 1970).

Within the G.P.A.S., the LEI was administered to secondary students (Grades 8 and 11) to assess the relationship between principal performances and students' perception of the learning environment. This allowed for the initial collection of information useful in identifying particular principal functions associated with student attitudes known to be conducive to learning.

The My School Inventory

To parallel the assessment of student attitudes towards the school climate at the secondary level, elementary students participating in field-testing the G.P.A.S. were administered the My School Inventory, an adaptation of My Class Inventory derived from the LEI. As originally developed, the My Class Inventory contained 45 items distributed over 5 scales labeled Satisfaction, Friction, Competetiveness, Difficulty, and Cohesiveness. The Inventory is considered appropriate for students aged 8 through 12. Reading level of the My Class Inventory items is generally considered appropriate for fourth grade students.

For field-testing purposes in Project R.O.M.E., the My Class Inventory was changed to the My School Inventory by rewording scale items to incorporate the concept of "school" rather than "class" or "classes." For example, the word "class" was changed to "school" in the following inventory item: The pupils enjoy their schoolwork in my class. This change was considered necessary in order to elicit a more generalized response about school characteristics, and to better take into account

situations where individual elementary students had different classes with different teachers during the regular school day.

Reported individual scale reliabilities for the My Class Inventory range from .54 to .77, considerably lower than those for the LEI. The instrument is still undergoing development, though it has been used successfully in several research and evaluation studies (Walberg, 1969; Cayne, 1970; Walberg, Sorenson, & Fishback, 1972). An evaluation of the My Class Inventory by Maguire, Gaetz, and Manos (1972) states: "...The My Class Inventory appeared to be superior...My Class produced more interpretable results...it provides a broader coverage of the entire atmosphere, in particular a greater effort is made to tap the interstudent relationships. For these two reasons, the My Class Inventory is commended for use in the evaluation of primary grade atmosphere..."

Like the LEI, the My School Inventory was administered to elementary students to assess the relationship between principal performance and elementary students' perceptions of various facets of the learning environment.

The School Survey

To assess teacher attitudes towards various factors mediating the school environment, the "School Survey" was selected by Project R.O.M.E. staff for field-testing. This instrument was developed by Coughlan and Cooke at the University of Chicago to assess a global construct called "work attitudes" or satisfaction of teachers within the school setting. They describe the instrument as being useful for the formative and summative evaluation of schools and for providing school personnel with feedback concerning teachers work attitudes.

Factor analysis of data from the third form of the School Survey (Coughlan, 1970) yielded 13 factors, each containing from 6 to 10 items and accounting for relatively moderate amounts of the total test variance. Kuder-Richardson Formula 20 internal-consistency reliability coefficients for individual factor scores range from .44 to .80 with a median of .67. A more detailed discussion of research and development efforts with the School Survey can be found in Coughlan and Cooke (1974, pp. 295-313). The revised form of the School Survey used in field-testing the G.P.A.S. measured teachers' attitudes along the 14 separate dimensions listed below. Sample items are provided for each Scale.

Scales	Sample Item
1. Administrative Practices	"The administration seems willing to give careful consideration to our ideas and suggestions."
2. Professional Work Load	"I am asked to spend too much time in meetings around here."
3. Non-Professional Work Load	"I receive sufficient clerical assistance to do my job effectively."
4. Materials and Equipment	"The instructional materials provided for me here are very satisfactory."
5. Buildings and Facilities	"The layout of this school is inconvenient for the staff."
6. Educational Effectiveness	"In my opinion, adequate educational standards are being upheld in this school."
7. Evaluation of Students	"Students' absences are excessive in this school."
8. Special Services	"Our library services for students are very satisfactory."
9. School-Community Relations	"In general, I approve of school board policies."

Scales	Sample Item
10. Supervisory Relations	"I seldom get the help I need in handling difficult discipline cases."
11. Colleague Relations	"People in my school cooperate well."
12. Voice in Educational Program	"I should have a greater voice in selecting students' textbooks and reference material."
13. Performance and Development	"I think my work performance is judged fairly here."
14. Financial Incentives	"I feel our salary system adequately rewards outstanding work."

In keeping with the G.P.A.S. assumptions about the relationship between principal performance and factors mediating the school environment, the School Survey was administered to all participating teachers with a view to eventually relating assessments of particular principal performances to various teacher attitudes. This effort allowed for the identification of principal competencies and performance indicators most conducive to the maintenance of desirable teacher attitudes and learning outcomes.

School Outcome Variables: Selection of Criterion Measures

One objective of the G.P.A.S. is to relate either directly or indirectly variables in principal's functioning to major school outcome variables. Once established, these relationships can be used as an informational base for the preliminary selection of particular principal performances deemed more or less important in optimizing school outcomes.

Three outcome variables were selected by Project R.O.M.E. assessment staff as appropriate for initially field-testing the G.P.A.S. Two of these were Georgia Statewide Achievement Testing Program data, and Average Daily Attendance (ADA) figures of participating schools. In selecting these variables, consideration was given to their ready avail-

ability and cost effectiveness, and to their meaningfulness as descriptive data from which student learning and global attitudes towards school might be inferred. While achievement test results represent summaries of performance from which "learning" as such is only inferred, these data were considered adequate for initial field-testing in describing outcome differences between participating schools. Average daily attendance figures have been used by many school officials as key information from which student attitudes towards the school and the quality of ths school program might be judged.

Similarly, global ratings of the overall job performance of the principal by supervisors in various job areas, can be considered an important dimension on which to compare principal performance. These ratings constitute a third outcome measure. A more detailed description of each measure is provided below.

Georgia Statewide Achievement Test Data

The Georgia Board of Education initiated the Statewide Achievement Testing Program in 1971 to provide information about the achievement of Georgia students in certain basic academic skills. Each year all Georgia students are administered the Iowa Tests of Basic Skills (ITBS) in the fourth and eight grades and the Tests of Academic Progress (TAP) in the eleventh grade.

The ITBS purportedly measures skills essential to success in any type of schoolwork. In the test situation, the student is required to use his acquired skills just as he does in his regular schoolwork. The ITBS assesses achievement in five basic skill areas: Vocabulary, Reading, Comprehension, Language Skills, Work-Study Skills, and Mathematics Skills.

The TAP is designed to provide an appraisal of student progress

toward academic goals that are widely accepted by secondary school educators. Each test in the TAP battery was designed to measure the extent to which the objectives of a basic area of high school instruction have been achieved. The areas include the following: Composition, Reading, and Mathematics.

In field-testing the G.P.A.S. during the Spring of 1975, data from the 1974-75 Statewide Testing Program were used to contrast participating schools. Even though these data were collected in the Fall of the 1974 academic year, they were considered a good approximation of school achievement levels: an approximation sensitive to academic differences between participating schools.

Average Daily Attendance

Since financial supoort from one fiscal year to the next is partially determined by ADA for most schools, ADA figures represent a descriptive school statistic of major importance. It might be postulated that differences in ADA figures reflect the global quality of the total school program, other facotrs held constant. Given this assumption, ADA figures can conceivably be used (as might other statistics such as drop-out rate) as a meaningful outcome variable to which other variables can be related. It would seem useful, for example, if one knew which principal functions among the many were most conducive to fostering relatively high and low ADA within the schools.

In field-testing the G.P.A.S., ADA figures were accumulated for participating schools from central office records. In most cases, these figures were available for the most recent twenty-day school period, one that most nearly coincided in time with the collection of other assessment information. Within the total assessment design, these figures were used

as a dependent measure to which other variables in the design could be related.

Superintendent Ratings of Principal Effectiveness

A third outcome variable (which might also be considered a type of mediating variable) measured in field-testing the G.P.A.S. was superintendent ratings of the effectiveness of participating principals' performances in various areas of administrative responsibility. Superintendents, because they have knowledge of how well principals are trained and carry out their duties and responsibilities were considered an important informational source.

An effectiveness rating form for each participating principal was provided for each principal's superintendent. The form was designed on the basis of the Rome Competency Classification Model (R.C.C.M.). The superintendent was asked to rate a individual principal's effectiveness, using a six-point rating scale from Extremely Ineffective to Extremely Effective, for each Functional Area of Responsibility and Administrative Operation. In addition, the superintendent form asked for a global judgment of a principal's overall performance compared to the "IDEAL" principal using an 11-point Effectiveness scale. The complete superintendent form can be found in the Instrument Appendix.

Field-Testing Procedures

Sample Schools

The total school sample participating in field-testing consisted of 45 public schools in the state of Georgia. Of these, 10 were classified as secondary (grades 8 and/or 11), and 35 were classified as elementary (grades 4 and 6). There was only one sixth grade school. Schools were selected on a voluntary basis from the DeKalb County school system (n=39),

whereas all schools from the Thomas County school system (n=6) were assessed. These two systems, while having some unique characteristics (e.g., one being more rural than the other) have many commonalities in terms of essential principal performances and job duties and responsibilities. For data analysis purposes, information collected in various schools was combined or treated separately depending upon instrumentation.

Within the total school sample, data were obtained from 45 superintendents and principals, 1200 teachers, 3500 elementary students, 3613 secondary students, 45 external observations, and an indeterminant number of central office personnel. These data related to elements previously explicated in the G.P.A.S. assessment design and variable classification system (See Table 4, p.21)

Mechanics of Data Collection

Assessment data were collected during late April and early May of 1975. In order to proceed in as efficient a manner as possible, and to be most conserving of school time, a large team of data collectors (with R.O.M.E. staff acting as supervising participants) were employed and trained to administer assessment instruments with the assistance of local personnel (e.g., school librarian). Student information was collected in large groups within particular schools during the regular school day. Student instruments (LEI, My School, PPDS-Student Form) required approximately 45 minutes to administer. Where possible, a R.O.M.E. staff member administered the PPDS-EO form to the school's principal at the same time.

All other instruments in the design, (teacher, principal, central office, and superintendent information) were administered on a "take home" basis with provision for adequate return deadlines. Teacher instruments, for example, were provided to teachers so that they could be completed

approximately two weeks before student data was collected. Total time for completion of the teacher instrument was approximately one hour. Similarly, a principal's self-assessment of all competencies and performance indicators required approximately one and one half hours. Average time for administration of the PPDS-EO instrument was one hour and fifteen minutes.

Even though large numbers of participating students and school personnel were involved in field-testing the G.P.A.S., efficient, cooperative scheduling, and the employment of additional personnel to formulate assessment "teams," allowed for minimal interruption of regularly scheduled school days. In the larger system (DeKalb County), for example, each of four collection teams completed an average of two schools per day.

CHAPTER III

FIELD TEST RESULTS: SUMMARIES OF DESCRIPTIVE STATISTICS FOR VARIABLES IN THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM

For practical reasons and ease of final reporting it was decided to describe the results of administering the Principal Performance Description Survey in terms of the total sample statistics rather than by individual schools or systems. This decision led to the use of composite school means and standard deviations (e.g., the mean of school means). Such composite aggregate indices are obviously descriptive and directly interpretable when contrasted with the values of the maximum absolute indices possible. In addition, such composite data can serve as "benchmarks" and reference points for any data derived from future testing with the G.P.A.S.

SUMMARY OF DESCRIPTIVE STATISTICS FOR INPUT VARIABLES

Results of PPDS-Teacher Form Administration

Performance ratings for the 117 items of the PPDS-Teacher Form were available from 1200 teachers in 45 schools. Data summaries for those items, grouped by Functional Area of Responsibility, are presented in Tables 6 through 10. There were no teacher items in the Functional Area of Responsibility labeled Support Management or the Administrative Operation area of Decision-Making.

Table 6 contains a data summary fro the 35 Curriculum/Instruction items. The highest rated item for both the Frequency and Effectiveness descriptive rating scales dealt with content related to individual student differences and the desirability of planning individualized programs of study (items 39 and 116). Lowest rated items on the Frequency scale dealt with topics such as scheduling released time for teacher planning and general discussions with teachers about evaluation activities (items 30, 54

TABLE 6

Summary of Means and Standard Deviations for Ratings of "Curriculum/Instruction" Competency Indicators Derived From Principal Performance Description Survey - Teacher Form*

FREQUENCY With Which Principal Performs Task			ITEM	EFFECTIVENESS With Which Principal Performs Task	
$\bar{X}$	SD			$\bar{X}$	SD
3.221	1.303	17.	Evaluates instructional climate by observing in the classroom	3.592	1.283
2.990	1.413	29.	Formulates grading practices with teachers.	3.600	1.188
2.741	1.599	30.	Schedules released time for teachers to plan for and revise courses during regular school day.	3.514	1.380
4.052	1.167	39.	Encourages teachers to consider individual differences when evaluating student progress.	4.100	1.060
3.737	1.197	40.	Discusses educational program changes with teachers.	3.901	1.083
2.997	1.318	41.	Discusses minimally acceptable academic performance standards with teachers.	3.506	1.151
3.539	1.302	42.	Encourages teachers to work together in modifying curriculum.	3.775	1.174
3.181	1.358	43.	Discusses with teachers those instructional skills for which they are to be held accountable.	3.663	1.159

*Data derived from 1200 teachers in 45 schools.

TABLE 6 (Con't)

$\bar{X}$	SD			$\bar{X}$	SD
3.688	1.337	47.	Encourages teachers to try new and innovative teaching methods in helping the consistently failing.	3.833	1.184
3.112	1.354	48.	Discusses problems of specific consistently failing students with teachers.	3.488	1.193
2.937	1.323	49.	Periodically discusses classroom goals with teachers.	3.429	1.204
2.994	1.363	50.	Discusses results of school testing program with teachers.	3.495	1.210
3.395	1.338	51.	Provides variety of instructional programs to meet individual learner needs.	3.699	1.174
3.175	1.350	52.	Works with a curriculum committee to establish goals.	3.635	1.160
3.099	1.427	53.	Appoints faculty committee to review curriculum content and organization and recommend needed changes.	3.657	1.206
2.806	1.376	54.	Collects suggestions concerning student performance criteria from teaching staff.	3.411	1.165
3.060	1.350	55.	Discusses problems in evaluating classroom instructional climate with teachers.	3.527	1.210
2.998	1.278	56.	Observes teachers in classroom in order to identify instructional problem solving skills needing improvement.	3.411	1.275
3.423	1.313	57.	Requests recommendations from departments concerning the master schedule.	3.752	1.132
3.656	1.258	58.	Orients staff to the need to take into account individual student differences.	3.801	1.146
2.887	1.327	59.	Discusses with faculty the design and use of instruments used to evaluate instructional program.	3.440	1.167

TABLE 6 (Con't)

$\bar{X}$	SD			$\bar{X}$	SD
2.981	1.377	60.	Discusses student performance criteria with teachers at grade level and/or departmental meetings.	3.571	1.173
2.876	1.368	62.	Discusses with teachers which procedures for evaluating both short and long range instructional objectives are to be employed.	3.468	1.191
3.277	1.288	63.	Periodically observes teacher-student classroom interaction.	3.586	1.230
3.740	1.259	64.	Requests teachers to identify students in need of special diagnostic testing.	3.894	1.132
3.575	1.292	74.	Encourages teachers to generate new curriculum ideas.	3.788	1.164
2.975	1.341	81.	Schedules staff meetings to discuss curriculum content areas where modification is needed.	3.550	1.193
2.995	1.367	85.	Organizes faculty committees to evaluate curriculum content.	3.524	1.191
3.403	1.348	96.	Appoints teachers to serve on curriculum committee.	3.819	1.135
3.574	1.257	103.	Discusses with teachers characteristics of environment conducive to learning.	3.806	1.159
3.078	1.245	104.	Discusses curriculum content and organization with staff.	3.569	1.143
3.050	1.298	109.	Discusses program evaluation methods with faculty.	3.578	1.164
3.188	1.287	110.	Visits classrooms to observe classroom learning environments.	3.588	1.270
3.823	1.199	116.	Encourages teachers to plan individual instruction program.	3.974	1.104
2.906	1.340	117.	Discusses test results with teachers.	3.455	1.212

and 82). None of the Effectiveness ratings fell below 3.4 which might be interpreted as indicating a generally high level of principal functioning, particularly when one considers that only a five-point scale was used. Considerable variability was associated with the ratings for almost all items.

Table 7 contains a data summary for the 40 PPDS-Teacher Form items dealing with Staff Personnel activities. Again considerable overlap in the highly rated items for both Frequency and Effectiveness is noted, although the diversity of content is considerable. Items 22, 77, 79, 100, and 102 share similarly high mean rankings. Topics dealt with, range from delegation of authority for classroom operation, to student records, and concerns related to, and affiliations with, professional associations. No items received particularly low ratings.

The Pupil Personnel items are present in Table 8. Teachers apparently see the principal as actively involved in general matters related to students. The form of that involvement is generally a physical attendance at or supervision of school funcitons (Items 9, 39, and 61). He apparently engages in these activities with some regularity and when in attendance makes a contribution.

A single item on the PPDS-Teacher Form related to the Functional Area of School Community Interface. Descriptive statistics for this item are to be found in Table 9. Both the Frequency and Effectiveness ratings for this item (number 38) were high. Teachers see the principal as frequently and effectively involved in suggesting that they (teachers) be active in communicating with parents.

The nine items and attendant statistical data comprising the Fiscal Management sub-scale of the PPDS-Teacher Form are presented in Table 10. No outstanding trends are evident in the data. Virtually all items received moderately high ratings.

TABLE 7

Summary of Means and Standard Deviations for Ratings of "Staff Personnel" Competency Indicators from the Principal Performance Description Survey - Teacher Form*

FREQUENCY With Which Principal Performs Task		ITEM	EFFECTIVENESS With Which Principal Performs Task	
$\bar{X}$	SD		$\bar{X}$	SD
3.998	1.360	1. Provides each teacher with a curriculum guide.	3.998	1.272
3.143	1.382	2. Schedules teacher meetings by grade level or department to discuss instructional practices.	3.679	1.252
3.367	1.335	3. Develops a system in which teachers work cooperatively in implementing instructional objectives.	3.665	1.213
3.325	1.408	5. Communicates to staff the importance of their participation in school policy desicion-making.	3.574	1.269
2.930	1.337	6. Meets with teachers periodically to discuss individual children.	3.547	1.219
3.231	1.260	7. Discusses system policies and decisions with individual staff members.	3.000	1.151
2.871	1.332	8. Discusses instructional objectives with individual teachers.	3.493	1.148

*Data derived from 1200 teachers in 45 schools.

$\bar{X}$	SD			$\bar{X}$	SD
3.193	1.409	10.	Discusses with teachers the necessity of being "objective" in using permanent records.	3.823	1.120
3.403	1.706	11.	Distributes permanent folders to teachers at beginning of year.	4.194	1.174
3.835	1.277	12.	Discusses with teachers the importance of keeping records up-to-date and complete.	4.055	1.097
3.223	1.509	13.	Distributes policy statement to teachers about the keeping of permanent records.	3.936	1.177
3.612	1.403	15.	Participates in professional improvement activities with teachers.	3.938	1.177
3.842	1.239	16.	Discusses duties and responsibilities with staff prior to assignment.	3.969	1.170
4.066	1.130	18.	Explains to teachers the importance of membership in professional organizations and continued professional growth.	3.888	1.211
3.953	1.268	19.	Informs staff members of assigned authority via memo, newsletter, letter or other written communication.	4.054	1.118
3.318	1.291	20.	Conducts needs assessment of professional educational staff.	3.685	1.146
3.220	1.342	21.	Periodically meets with staff to discusses and evaluate assignments.	3.683	1.172
4.149	1.028	22.	Delegates authority for classroom operation to teacher according to system policies.	4.172	.993
3.232	1.359	23.	Assigns available specialists to work with staff at in-service training sessions.	3.670	1.171
3.723	1.334	24.	Encourages teacher feedback on school operations in faculty/ department/grade level meetings.	3.784	1.297
3.261	1.331	69.	Discusses with teachers policies for keeping permanent records.	3.753	1.169

TABLE 7 (Con't)

$\bar{X}$	SD			$\bar{X}$	SD
3.091	1.431	75.	Discusses results of classroom observations with individual teachers.	3.753	1.169
3.387	1.318	76.	Encourages teachers to use in-class methods to highlight student achievements.	3.747	1.115
4.425	0.906	77.	Provides staff with written information concerning salary schedules.	4.536	0.828
3.533	.043	78.	Communicates results of staff evaluation to staff members.	3.939	1.147
4.205	1.030	79.	Explains professional benefits accruing to members of professional organizations during faculty meetings, e.g., legal protection, special insurance plans, etc.	4.247	1.009
3.951	1.343	97.	Provides each teacher with a copy of system-wide and school policy handbooks.	4.213	1.109
2.531	1.384	98.	Collects information from teachers on whether they can correctly interpret data in student cumulative records.	3.411	1.203
3.167	1.350	99.	Discusses with teachers information to be entered in permanent records.	3.738	1.143
4.280	1.052	100.	Makes records available to teachers.	4.325	1.001
3.715	1.344	101.	Discusses with teachers the importance of "confidentiality" of records.	4.130	1.071
4.261	.995	102.	Encourages staff to join and participate in professional organizations.	4.095	1.109
3.513	1.185	105.	Discusses system policies and priorities with staff.	3.751	1.133
4.100	1.034	106.	Makes himself available for conferences to staff members with decision-making authority.	4.105	1.104
2.715	1.309	108.	Supervises teachers in the classroom.	3.399	1.271
3.594	1.177	111.	Provides necessary teaching aids.	3.788	1.129

TABLE 7 (Con't)

$\bar{X}$	SD			$\bar{X}$	SD
3.586	1.240	112.	Informs teachers of available instructional resources.	3.836	1.155
3.087	1.291	113.	Collects information concerning teaching practices by observing teachers in the classroom.	3.483	1.247
3.604	1.328	114.	Publicly recognizes and commends teachers for professional activities and accomplishments.	3.913	1.190
4.051	1.095	115.	Informs teachers about various state, local, and national professional organizations.	4.031	1.121

TABLE 8

Summary of Composite School Means and Standard Deviations for Ratings of "Student Personnel" Competency Indicators from the Principal Performance Descriptive Survey - Teacher Form*

FREQUENCY With Which Principal Performs Task			ITEM	EFFECTIVENESS With Which Principal Performs Task	
$\bar{X}$	SD			$\bar{X}$	SD
3.315	1.404	4.	Discusses importance of confidentiality of student records with staff.	3.928	1.135
4.571	.830	9.	Attends scheduled inter- and intra-school activities.	4.391	.956
3.271	1.374	14.	Discusses responsibility for collecting student information with staff.	3.771	1.138
3.367	1.316	32.	Discusses with teachers school policies related to the maintenance of student cumulative records.	3.828	1.123
3.988	1.182	33.	Provides supervisory assistance for school activities.	4.033	1.148
3.318	1.475	37.	Requests that all teachers report major rule infractions to the principal.	3.686	1.279
4.875	.565	61.	Attends PTO-PTA meetings.	4.630	.825
3.469	1.320	70.	Makes school behavioral guidelines available to students and teachers.	3.686	1.232
3.590	1.240	71.	Discusses classroom behavior problems with teachers and students.	3.659	1.276
3.308	1.297	72.	Discusses pupil personnel problems with teahcers.	3.612	1.202

*Data derived from 1200 teachers in 45 schools.

TABLE 8 (Con't)

$\bar{X}$	SD			$\bar{X}$	SD
3.152	1.338	73.	Discusses with teachers information to be included in student cumulative records.	3.697	1.175
3.764	1.245	82.	Arranges for parent-student-teacher conferences when necessary to discuss inappropriate student behavior.	4.037	1.137
3.126	1.349	91.	Discusses information to be entered on student records with staff.	3.703	1.161
3.019	1.266	92.	Discusses student information priorities with staff.	3.494	1.112
3.533	1.358	93.	Delegates authority for obtaining new student records to appropriate staff members.	3.961	1.090
3.558	1.232	94.	Discusses disciplinary responsibilities with individual teachers.	3.741	1.232
3.614	1.315	95.	Discusses with teachers the importance of being consistent in disciplinary actions taken.	3.874	1.193

TABLE 9

Summary of Means and Standards Deviations for Ratings of "School-Community Interface" Competency Indicators from the Principal Performance Description Survey - Teacher Form*

FREQUENCY With Which Principal Performs Task			ITEM	EFFECTIVENESS WITH WHICH Principal Performs Task	
$\bar{X}$	SD			$\bar{X}$	SD
4.269	1.027	38.	Encourages teachers to inform parents about school programs and activities through students.	4.136	1.062

*Data derived from 1200 teachers in 45 schools.

TABLE 10

Summary of Means and Standard Deviations for Ratings of "Fiscal Management" Competency Indicators from the Principal Performance Description Survey - Teacher Form*

FREQUENCY With Which Principal Performs Task		ITEM		EFFECTIVENESS With Which Principal Performs Task	
$\bar{X}$	SD			$\bar{X}$	SD
3.782	1.260	28.	Requires teachers to prioritize their materials and equipment needs.	3.896	1.130
3.806	1.234	31.	Informs teachers of instructional materials budget.	4.018	1.112
3.525	1.207	83.	Periodically collects instructional materials and equipment needs from staff.	3.772	1.118
3.135	1.308	84.	Periodically collects data on staffing needs from staff.	3.547	1.168
3.483	1.257	86.	Explains budget guidelines to staff responsible for directing various school activities.	3.858	1.091
3.070	1.415	87.	Discusses legal requirements affecting budget expenditures with staff.	3.729	1.165
3.588	1.317	88.	Monitors the use of school funds by various school clubs and organizations.	3.913	1.135
3.440	1.391	89.	Informs staff in writing of procedures to be followed in requisitioning instructional materials and equipment.	3.924	1.167
3.050	1.369	90.	Discusses results of instructional materials needs survey with teachers.	3.634	1.178

*Data derived from 1200 teachers in 45 schools.

Items dealing with System-Wide Policies and Operations are presented in Table 11. The outstanding characteristics of the top rated items for both the Frequency and Effectiveness evaluative categories is the common thread of "communication" activities that runs through the items (numbers 25, 26, 34, 67). Principals are seen as frequently and effectively communicating with teachers about school board policies, general school problems, job responsibilities, and job performance evaluations (item 44).

In an effort to facilitate: 1) interpretation of the great variety of complex data, and 2), statistical analyses items on the PPDS-Teacher Form were grouped into sub-scales based on Functional Area of Responsibility, and Administrative Operation (See Figure 1 in the Introduction Section). Composite school means and standard deviations for the Frequency and Effectiveness ratings for these sub-scales are presented in Tables 12 and 13. The mean scores across sub-scales are not directly comparable due to the presence of different numbers of items on each scale. A ratio was therefore formed of the mean score to the maximum possible (number of items on sub-scale multiplied by 5, the maximum possible rating) to yield a percentage score which could be used to make both absolute (against a standard of 100%) and comparative (across sub-scale) interpretations. In addition, an average item rating was derived by dividing the mean score by the number items on a particular sub-scale. No remarkable trends are evident in the data of either Table 12 or Table 13. The "Mean as % of Maximum Possible" values are generally in the above average range with perhaps only one discrepancy noteworthy. The exception deals with principal involvement with Pupil Personnel activities. The mean percent index for Frequency was observed to be 63 yet the comparable value for Effectiveness was 45. Apparently teachers see the principal as frequently engaged in

TABLE 11

Summary of Means and Standard Deviations for Ratings of "System-Wide Policies and Operations" Competency Indicators from the Principal Performance Description Survey - Teacher Form*

FREQUENCY With Which Principal Performs Task		ITEM		EFFECTIVENESS With Which Principal Performs Task	
$\bar{X}$	SD			$\bar{X}$	SD
3.746	1.386	25.	Distributes written copies of school board policies to all school personnel.	4.071	1.124
3.731	1.277	26.	Discusses school board policies with staff at faculty meetings.	3.932	1.159
3.584	1.502	27.	Posts copy of school board policies on teachers' bulletin board.	3.894	1.208
3.979	1.113	34.	Identifies and defines school problems by meeting with staff.	3.929	1.202
3.499	1.332	35.	Collects suggestions from staff regarding needed physical facilities improvement.	3.697	1.210
3.767	1.381	36.	Collects suggestions from staff as to most effective methods for implementing board of education recommendations.	3.357	1.217
3.689	1.219	44.	Discusses evaluations with individual staff members.	3.901	1.178
3.326	1.284	45.	Discusses board of education recommendations with staff.	3.660	1.139
3.317	1.312	46.	Discusses system goals with staff.	3.683	1.134

*Data derived from 1200 teachers in 45 schools.

TABLE 11 (Con't)

$\bar{X}$	SD			$\bar{X}$	SD
3.149	1.463	65.	Provides leadership staff with a written description of their responsibilities and duties.	3.742	1.195
3.334	1.300	66.	Discusses system-wide goals with staff.	3.656	1.139
3.744	1.109	67.	Discusses job responsibilities with staff.	3.864	1.106
3.242	1.245	68.	Discusses the services provided by subject matter specialists with teachers.	3.639	1.134
2.706	1.323	80.	Collects suggestions from staff for designing system-wide goals.	3.274	1.157
3.102	1.367	107.	Appoints subject matter area committee to formulate goals and objectives consistent with school district goals.	3.656	1.168

TABLE 12

Summary of Composite School Means for FREQUENCY Ratings of Sub-Scores from the Principal Performance Description Survey - Teacher Form Derived from 1200 Teachers in 45 Schools

SUB-SCALE Functional Area of Responsibility	Number Items on Sub-Scale	$\bar{X}$	$\bar{X}$ as % of Maximum Possible	Average Item Rating	SD
	FREQUENCY SCORE				
1. Curriculum/Instruction	35	99.918	57	2.85	39.171
2. Staff Personnel	40	125.659	63	3.14	41.137
3. Pupil Personnel	17	53.664	63	3.16	17.938
4. Support Management*	--	---	--	--	---
5. School-Community Interface	1	4.269	85	4.27	1.027
6. Fiscal Management	9	26.807	60	2.98	10.495
7. System-Wide Policies and Operations	15	45.680	61	3.05	15.751
Administrative Operation					
1. Data Collecting	13	36.308	56	2.79	14.072
2. Planning	7	19.717	56	2.82	7.770
3. Communicating	74	225.825	60	3.05	79.440
4. Decision-Making*	--	---	--	--	---
5. Implementing	21	66.365	63	3.16	20.739
6. Evaluating	2	6.170	62	3.09	2.428

*No relevant items for this sub-scale on the PPDS-Teacher form.

TABLE 13

Summary of Composite School Means for EFFECTIVENESS Ratings of Content Sub-Scorer from the Principal Performance Description Survey - Teacher Form Derived from 1200 Teachers in 45 Schools

SUB-SCALE Functional Area of Responsibility	Number Items on Sub-Scale	$\bar{X}$	$\bar{X}$ as % of Maximum Possible	Average Item Rating	SD
EFFECTIVENESS SCORE					
1. Curriculum/Instruction	35	98.639	56	2.82	45.181
2. Staff Personnel	40	124.198	62	3.10	46.933
3. Pupil Personnel	17	38.607	45	2.27	16.799
4. Supoort Management*	--	---	--	--	---
5. School-Community Interface	1	4.136	83	4.14	1.062
6. Fiscal Management	9	26.929	60	2.99	11.124
7. System-Wide Policies and Operations	15	44.833	60	2.99	18.001
Administrative Operation					
1. Data Collecting	13	35.914	55	2.76	16.243
2. Planning	7	19.511	56	2.79	9.126
3. Communicating	74	223.864	60	3.03	89.894
4. Decision-Making*	--	---	--	--	---
5. Implementing	21	64.747	62	3.08	23.643
6. Evaluating	2	6.557	66	3.28	2.636

*No relevant items for this sub-scale on the PPDS-Teacher Form.

student related administrative activities,yet the handling of these activities is not seen as being optimal. School Community Interface scores should probably be discounted due to the fact that only one item is involved. In general there is great similarity in the ratings for Frequency and Effectiveness across all sub-scales.

Results of PPDS-Student Form Administration

Two student principal performance description forms were developed and administered. One form for elementary school students with 14 items was administered to 3350 Fourth and Sixth grade students. A second form containing the same 14 items was administered to 3613 combined Eighth and Eleventh grade students. A three-point rating scale was used for the Frequency and Effectiveness categories of the elementary form and a four-point scale for the Eighth and Eleventh grade form. Data for the 14 elementary student items are to be found in Table 14. It was not suprising to find that the three highest rated frequency and effectiveness items dealt with questions of student behavior and discipline (items 3, 4, and 9). These same three items were also found to be highest rated for the Eighth and Eleventh grade students. The relevant data are included in Table 15. If anything, the ratings for these student behavior items are more intense for the upper level students. Item number one "My principal talks with me about things I like to do" received the lowest frequency and effectiveness ratings for both elementary and secondary students.

A remarkable similarity is seen in both Table 14 and 15 in terms of the comparability of item rankings. In fact, rank order correlations of .93 and .96 were computed between the Frequency and Effectiveness item means for the elementary and upper student groups respectively. Such a similarity

TABLE 14

Summary of Composite School Means and Standard Deviations for Elementary Grade Student Ratings of Frequency of Occurrence and Effectiveness of Performance for Selected Principal Competency Indicators*

ITEM	Frequency of Occurrence		Effectiveness of Performance	
	$\bar{X}$	SD	$\bar{X}$	SD
1. My principal talks with me about things I like to do.	1.363	.568	1.903	.773
2. My principal meets with parents and children to plan what we learn in school.	1.844	.691	2.088	.767
3. My principal talks with children about why they misbehave.	2.576	.618	2.458	.699
4. My principal talks with children about what will happen if they misbehave.	2.489	.643	2.485	.689
5. My principal talks with children during lunch and free time.	1.494	.639	1.863	.772
6. My principal treats children alike when break rules.	2.155	.759	2.201	.800
7. My principal tells us how important it is to come to school every day.	1.833	.816	2.179	.764
8. My principal is easy to see when I want to talk to him about something important.	1.908	.776	2.056	.790
9. My principal gives us rules on how to behave in school.	2.555	.642	2.481	.670
10. My principal talks with my class when my class misbehaves.	2.007	.749	2.258	.765
11. My principal helps the teachers watch over us at school activites.	1.828	.717	2.074	.757

*Three point rating scales were used. Frequency 1 = almost never -- 3= almost always
Effectiveness 1 = not too well -- 3= very well

TABLE 14 (Con't)

		$\bar{X}$	SD	$\bar{X}$	SD
12.	My principal goes to school activities.	1.970	.810	2.093	.744
13.	My principal helps children when they misbehave.	2.301	.740	2.389	.760
14.	When children misbehave my principal talks with them, their parents and teachers.	2.291	.710	2.395	.746

TABLE 15

Summary of Composite School Means and Standard Deviations for Combined Eighth and Eleventh Grade Student Ratings of Frequency of Occurrence and Effectiveness of Performance for Selected Principal Competency Indicators*

ITEM	Frequency of Occurrence		Effectiveness of Performance	
1. My principal talks with me about things I like to do.	1.378	.784	1.875	1.028
2. My principal meets with parents and children to plan what we learn in school.	1.690	.955	1.971	1.024
3. My principal talks with children about why they misbehave.	2.650	1.156	2.464	1.136
4. My principal talks with children about what will happen if they misbehave.	2.873	1.132	2.743	1.152
5. My principal talks with children during lunch and free time.	2.017	1.138	2.149	1.136
6. My principal treats children alike when they break rules.	2.414	1.188	2.282	1.160
7. My principal tells us how important it is to come to school every day.	2.237	1.179	2.364	1.131
8. My principal is easy to see when I want to talk to him about something important.	2.048	1.126	2.141	1.097
9. My principal gives us rules on how to behave in school.	2.951	1.102	2.707	1.127
10. My principal talks with my class when my class misbehaves.	1.995	1.130	2.248	1.111
11. My principal helps the teachers watch over us at school activities.	2.494	1.173	2.533	1.132

*Four point rating scales were used. Frequency 1 = almost never--4= almost always
Effectiveness 1 =not too well--4=very well

TABLE 15 (Con't)

	$\bar{X}$	SD	$\bar{X}$	SD
12. My principal goes to school activities.	2.964	1.159	2.767	1.171
13. My principal helps children when they misbehave.	2.324	1.131	2.395	1.128
14. When children misbehave my principal talks with them, their parents and teachers.	2.748	1.126	2.544	1.150

in ratings might simply be the actual state of affairs or represent a general "halo" response set factor.

Results of PPDS-Principal Form Administration

It will be recalled that all 338 performance indicators were given self-ratings by each principal in each of the schools included in the field testing sample. Ratings were given for both perceptions of how frequently they were performed and how effectively they were performed. The resulting data are too numerous to report here, but summary means and standard deviations for individual items can be found in the Data Appendix which accompanies this Final Report.

A more efficient method of summarizing the data is by grouping the items on the Principal Form by Functional Area of Responsibility and Administrative Operation. The relevant data summaries for the Frequency and Effectiveness ratings can be found in Tables 16 and 17 respectively. Using the column labeled "$\overline{X}$ as % of Maximum Possible" as a reference, it can be seen that the principal self-ratings are quite high, given an upper limit of 100%. The ratings are also high relative to the teacher ratings of the same areas (compare with data of Tables 12 and 13). The similarity of ratings for Frequency and Effectiveness across the "responsibility" and "operation" dimensions is noteworthy. The differences in percentage points are not sufficiently large to warrant any differential interpretations.

Results of PPDS-External Observer Form Administration

The 155 items of the External Observation Form were originally grouped into 11 categories to facilitate the administration of the form to the principal and his staff. These categories were as follows:

TABLE 16

Summary of Composite Means and Standard Deviations for EFFECTIVENESS Ratings of Sub-Scores from the Principal Performance Description Survey - Principal Form for 45 Principals

	EFFECTIVENESS SCORE				
SUB-SCALE Functional Area of Responsibility	Number of Items on Sub-Scale	$\bar{X}$	$\bar{X}$ as % of Maximum Possible	Average Item Rating*	SD
1. Curriculum/Instruction	74	268.864	73	3.63	49.322
2. Staff Personnel	56	218.136	78	3.90	36.026
3. Pupil Personnel	66	264.386	80	4.01	42.482
4. Support Management	8	32.705	82	4.09	5.932
5. School-Community Interface	7	24.432	70	3.49	5.069
6. Fiscal Management	74	295.682	80	4.00	58.524
7. System-Wide Policies and Operations	53	203.477	77	3.84	42.411
Administrative Operation					
1. Data Collecting	38	148.182	80	3.90	27.348
2. Planning	49	185.500	76	3.79	34.951
3. Communicating	101	390.954	77	3.87	63.691
4. Decision-Making	46	172.386	75	3.75	33.353
5. Implementing	64	259.318	81	4.05	40.127
6. Evaluating	40	151.341	76	3.78	27.776

*Item ratings used were: 1 = Ineffective, ..., 5 = Very Effective.

TABLE 17

Summary of Composite Means and Standard Deviations for FREQUENCY Ratings of Sub-Scores from the Principal Performance Description Survey - Principal Form for 45 Principals

FREQUENCY SCORE

SUB-SCALE Functional Area of Responsibility	Number of Items on Sub-Scale	$\bar{X}$	$\bar{X}$ as % of Maximum Possible	Average Item Rating*	SD
1. Curriculum/Instruction	74	272.318	74	3.68	50.257
2. Staff Personnel	56	217.636	78	3.89	41.782
3. Pupil Personnel	66	262.568	80	3.98	47.643
4. Support Management	8	32.182	81	4.02	6.606
5. School-Community Interface	7	24.818	71	3.55	4.474
6. Fiscal Management	74	290.364	78	3.92	67.006
7. System-Wide Policies and Operations	53	200.091	76	3.78	45.589
Administrative Operation					
1. Data Collecting	38	147.159	78	3.87	30.355
2. Planning	49	181.705	74	3.71	39.241
3. Communicating	101	391.124	77	3.87	72.625
4. Decision-Making	46	184.000	80	4.00	36.612
5. Implementing	64	259.659	81	4.06	44.398
6. Evaluating	40	149.432	75	3.74	31.495

*Item ratings used: 1 = Never, ... , 5 = Very Often.

1. Financial Information
2. Plant/Facility Maintenance
3. Personnel Staff
4. Attendance
5. Student Cumulative Records
6. Discipline
7. Curriculum
8. Student Needs Assessment
9. School/Community Interface
10. System Goals and Policies
11. Miscellaneous

Such a grouping aided in the identification of the required documentation and evidence that specific performances had been accomplished or were in process of being implemented.

Tables to be found in the Data Appendices volume of this Report contain summary statistics on the individual items contained in the External Observation Form (EO). Included are the average frequencies and percentages with which certain elements in the form were observed (N=45). These tables are grouped according to the "categories" noted above. Also, included in the tables are "product means." These means were derived by assigning scores to each of the four possible product categories as follows:

Product Cateogry	Rating
Informal	1
Input	2
Process	3
Product	4

In order to make the EO data more compatible with the teacher and principal data the 155 items were recast into one of the seven Functional Area of Responsibility and six Administrative Operation categories of the R.O.M.E. Competency Classification Model. A summary of the EO product score means is presented in Table 18. Using $\bar{X}$ as a percent of the maximum possible to reference the data interpretation, it can be seen that considerable variability across the various dimensions is evident. Documentation for performance indicators in the School Community Interface and Implementation areas was greatest. Performance evidence in the Support Management and Evaluating areas were the least observable. The data appear to be in contradiction with those of Tables 15 and 16 which summarize principal self-ratings, where most all areas were highly rated. One possible interpretation of these findings is that principals rate themselves quite highly on "informal" performances, those corresponding to low scores on the EO product scale.

A Principal Performance Description Survey was also developed for use by Central Office Personnel. Due to incomplete returns, summary data cannot be presented.

TABLE 18

Summary of Composite Means and Standard Deviations for Product Scores Derived from External Observations Instrument for 45 Principals

SUB-SCALE Functional Area of Responsibility	Number of Items on Sub-Scale	PRODUCT SCORE* $\bar{X}$	$\bar{X}$ as % of Maximum Possible	Average Item Rating	SD
1. Curriculum/Instruction	35	66.689	48	1.91	25.521
2. Staff Personnel	12	22.156	46	1.85	6.090
3. Pupil Personnel	29	61.000	53	2.10	13.545
4. Support Management	3	4.688	39	1.56	2.361
5. School-Community Interface	3	8.711	73	2.90	3.395
6. Fiscal Management	45	104.400	58	2.32	26.049
7. System-Wide Policies and Operations	29	58.089	50	2.00	17.014
Administrative Operation					
1. Data Collecting	19	43.111	57	2.27	9.138
2. Planning	37	72.556	49	1.96	21.713
3. Communicating	2	4.459	56	2.23	1.260
4. Decision-Making	43	81.911	[illegible]	1.90	25.035
5. Implementation	24	75.800	79	3.16	12.361
6. Evaluating	31	47.333	38	1.53	14.769

*A four category scale was used: 1 = Informal Evidence, 2 = Input Evidence Available, 3 = Evidence (Product) In Process, 4 = Product Available Evidence.

SUMMARY OF DESCRIPTIVE STATISTICS FOR MEDIATING VARIABLES

Two general levels of criterion measures for the Georgia Principal Assessment System have been described as Mediating (between the principal and student through teacher morale and school learning climate) and Outcome (student performance and school attracting and holding power). Methods used to gather these two types of data were described on pages 32-42 of this report. Descriptive statistical summaries will now be presented for the criterion measures.

The mediating variable outcome data were obtained from measures of 1) elementary student perceptions of school climate, 2) eighth and eleventh grade student perceptions of the general school learning environment, and 3) teacher morale or work satisfaction.

Elementary Student Perception of School Climate: The My School Inventory

A summary of the data derived from the administration of the 45-item My School Inventory to 3350 elementary students is presented in Table 19. The 45 items have been grouped into five general areas: Satisfaction, Friction, Competitiveness, Difficulty, and Cohesiveness. The obtained ranges on the five dimensions vary from one (due to omitted responses) to 18. The true interpretable ranges, however, vary from nine to eighteen. Because no norms are available for the inventory it is possible to directly interpret the means and standard deviations only on an internal basis for this sample. It should be remembered that the data of Table 19 are based on

TABLE 19

Summary of Composite School Means and Standard Deviations for the Five Dimensions of the My School Inventory Administered to Elementary Students (N=3350) in Thirty-Five Schools*

Dimension	Means	Mean as % of Maximum Possible	Standard Deviation
Satisfaction	14.238	79	2.410
Friction	10.425	56	1.551
Competitiveness	10.903	61	1.370
Difficulty	14.431	80	1.809
Cohesiveness	13.117	73	1.524

*Each dimension contains nine items. Items were scored 1 = yes and 2 = no. High means should be interpreted negatively, i.e., in a direction opposite that of the dimension label.

[illegible] of the average scores for 35 individual schools.

Assuming an average, or neutral score on each scale to be 13.5, it would appear that the elementary pupils in this sample tended to be somewhat dissatisfied with their schools and to perceive their schools as more easy than difficult for them. There were, however, moderate differences of opinion reflected in the school dissatisfaction responses as indicated by the magnitude of the standard deviation. The pupils in this sample appear to be neutral concerning the cohesiveness, or lack of it, of their schools. They also tended to perceive their schools as having a somewhat competitive environment and as reflecting an atmosphere of friction.

Secondary Student Perceptions of School Climate: The Learning Environment Inventory

A summary of the data derived from the administration of the 105-item Learning Environment Inventory to 3613 eighth and eleventh grade students is presented in Table 20. The 105 items are grouped into 15 dimensions: Cohesiveness, Diversity, Formality, Speed, Environment, Friction, Goal Direction, Favoritism, Difficulty, Apathy, Democracy, Cliqueness, Satisfaction, Disorganization, and Competitiveness. The obtained ranges on the 15 dimensions vary from one to 28 due to omission of items by small numbers of students. The true interpretable ranges, however, vary from seven to 28. The means reflected in the norming sample data are presented in Table 20 together with the means and standard deviations obtained by the sample used in this study.[1]

Inspection of the summarized data shows that this sample departed most markedly from the norming sample on the following dimensions: Friction, Favoritism, and Democracy. The sample students perceived less friction and favoritism and greater democracy in their schools than did the norming

[1] Norming data taken from Anderson (1973).

TABLE 20

Summary of Composite School Means and Standard Deviations for the Fifteen Dimensions of the Learning Environment Inventory Administered to Combined Eighth and Eleventh Grade Students (N=3613)*

	Dimension	Mean	Norming Sample Mean**	Mean As % of Maximum Possible	Standard Deviation
1.	Cohesiveness	18.265	17.68	65	3.242
2.	Diversity	20.127	20.36	72	2.862
3.	Formality	18.457	17.67	66	2.967
4.	Speed	18.857	17.63	67	3.691
5.	Environment	15.556	16.51	56	3.271
6.	Friction	20.128	17.16	72	3.316
7.	Goal Direction	16.219	17.92	58	3.374
8.	Favoritism	18.298	14.48	65	3.696
9.	Difficulty	17.972	18.98	64	2.997
10.	Apathy	18.470	17.96	66	3.489
11.	Democratic	14.952	17.35	53	3.051
12.	Cliquiness	21.029	19.29	75	3.168
13.	Satisfaction	15.050	16.44	54	3.061
14.	Disorganization	18.149	16.84	65	3.601
15.	Competitiveness	18.271	16.96	65	3.350

*Each dimension is composed of seven items. Items were scored 1 = Strongly Disagree....4 = Strongly Agree.

**Normative data derived from Anderson (1973).

sample. This sample also tended to perceive their class as having less difficulty in keeping up with their work (Speed) than the norming sample, experienced more Goal Direction and more "challenge" by their schools (Difficulty) and expressed somewhat higher Satisfaction, less Disorganization, and less Competition than did the students in the norming sample.

Teacher Work Satisfaction: The School Survey

A summary of the data obtained from the administration of the 118-item School Survey to 1200 elementary and secondary teachers is presented in Table 21 The 118 items were grouped into 14 general areas: Administrative Practices, Professional Work Load, Non-Professional Work Load, Materials and Equipment, Buildings and Facilities, Educational Effectiveness, Evaluation of Students, Special Services, School-Community Relations, Supervisory Relations, Colleague Relations, Voice in Educational Programs, Performance and Development, and Financial Incentives. The obtained ranges vary from one (due to omitted responses) to a maximum of 30 points (dependent on the number of items in each dimension.) Because adequate norms were unavailable for this survey, it is possible to interpret the means and standard deviations only on an internal basis for this sample using assumed means, as neutral points, on each dimension.

Inspection of the summarized data in Table 21 shows that the teachers in this sample tended to be somewhat dissatisfied with Administrative Practices and processes of Evaluation of Students in their schools as well as with their Voice in Educational Programs, School-Community Relations, and Financial Incentives. On the other hand, teachers in this sample tended to hold rather positive attitudes toward their Professional Work Load, Supervisory Relations, and Colleague Relations.

TABLE 21

Summary of Means and Standard Deviations for the Dimensions of the School Survey Administered to 1200 Teachers in Forty-Five Schools*

	Number of Items on Scale	Assumed Mean of Neutral Point	Mean	Mean as % of Maximum Possible	Average Item Rating	Standard Deviation
1. Administrative Practices	9	18.0	15.580	58	1.73	7.164
2. Professional Work Load	9	18.0	19.603	73	2.18	5.017
3. Non-Professional Work Load	6	12.0	12.808	71	2.13	3.827
4. Materials and Equipment	8	16.0	15.887	66	1.99	5.768
5. Buildings and Facilities	7	14.0	14.432	69	2.06	4.506
6. Educational Effectiveness	10	20.0	20.280	68	2.03	6.439
7. Evaluation of Students	10	20.0	18.598	62	1.86	6.333
8. Special Services	8	16.0	15.420	64	1.93	5.153
9. School-Community Relations	7	14.0	13.088	62	1.87	5.142
10. Supervisory Relations	10	20.0	21.360	71	2.14	7.213
11. Colleague Relations	7	14.0	15.212	72	2.17	5.011
12. Voice in Educational Programs	8	16.0	13.234	55	1.65	5.217
13. Performance and Development	10	20.0	20.220	67	2.02	6.600
14. Financial Incentives	9	18.0	14.628	54	1.63	5.227

*Items on each dimension were score 1 = disagree and 3 = agree.

It was anticipated that superintendent evaluations of individual school principals would constitute another type of "mediating" criterion data against which to validate principal performance indicators. Unfortunately, complete data were not available and this data source had to be eliminated from this study.

SUMMARY OF DESCRIPTIVE STATISTICS FOR OUTCOME VARIABLES

It was noted earlier that one school outcome variable was operationalized in the form of achievement test scores. Fourth and Eighth grade achievement test data from the Iowa Tests of Basic Skills, and eleventh-grade data from the Tests of Academic Progress was used in field-testing the G.P.A.S. These data were derived from the Fall-1974 implementation of the Georgia Statewide Testing Program.[1] A second operationalization of school outcome variables was in the form of school average daily attendance (ADA).

Student Achievement and Average Daily Attendance Data

Data on student achievement were obtained from the Georgia Statewide Testing Program. The Iowa Test of Basic Skills (ITBS), administered to fourth and eighth graders, yields five subtest scores as well as a composite or total score. The subtests are: Vocabulary, Reading, Language, Work Study, and Mathematics. The Tests of Academic Progress (TAP), administered to eleventh graders, yields two scores for the Reading and Mathematics subtests. Data on average daily attendance were also obtained and represent averages for the sample schools during the 20 day period closest to the administration by Project R.O.M.E. of the Principal Performance Description Surveys and School Enviornment surveys. The summary of these

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[1] Appreciation is hereby expressed to Mr. Larry D. Hutcheson, Director of the Georgia State Wide Testing Program for his assistance in providing access to these data.

TABLE 22

Summary of Means and Standard Deviations
of Student Outcome Criterion Data

VARIABLE	Mean*	Standard Deviation
FOURTH GRADE CLASSES (N=35)		
Iowa Tests of Basic Skills		
1. Vocabulary	49.97	32.69
2. Reading	43.20	30.31
3. Language	44.23	29.89
4. Work Study Skills	51.17	30.29
5. Mathematics	54.37	33.49
6. ITBS Battery Total	49.31	31.07
Average Daily Attendance (School)**	95.09	1.29
EIGHTH AND ELEVENTH GRADE CLASSES (N=10)		
Tests of Academic Progress		
1. Reading	49.50	36.24
2. Mathematics	47.60	32.66
Average Daily Attendance (School)**	92.89	2.30

*Represents a mean of the percentile ranks (using national norm tables) of the class means.

**Expressed as an average percentage of maximum daily attendance for 20 day periods closest to time of field testing

data are presented in Table 22. Data were summarized in terms of percentile ranks of the grade means and averages of these percentile ranks.

It can be seen that the average achievement for both elementary and secondary schools used in the sample is quite similar to the national averages. The most striking departures from this basic similarity occurs on the ITBS Reading and Language subtests where the averages for the fourth and eleventh graders in this sample were at about the 44th percentile as compared to the norming sample's average of the 50th percentile.

Average daily attendance appears to be quite high for the sample schools. An average of about 95 percent attendance during the 20 day period was observed for the Fourth graders. The combined eighth and eleventh graders in the sample schools achieved nearly 93 percent attendance during the same period.

CHAPTER IV

FIELD TEST RESULTS: SUMMARY AND DISCUSSION OF VALIDATION ANALYSES AND METHODOLOGY

The general validation paradigm for the Georgia Principal Asessment System described in Chapter II of this report (see p. 18) conceptualizes three classes of variables: Input, Mediating, and Outcome. Both Mediating and Outcome measures can be considered criterion variables, but they are conceptualized as criterion variables existing at different levels in terms of their hypothesized association with assessments of principal competence. The assessment model assumes that Input variables will show a greater degree of association to Mediating variables (in terms of the magnitude and frequency of significant correlations) than to Outcome measures. This hypothesis is based on the assumed greater functional directness of influence or association between principal performances and factors mediating the school environment. On the other hand, rather strong relationships should be evident between Mediating and Outcome variables since student achievement and average daily attendance are considered more affected by school climate and teacher morale factors than specific principal performances.

The process of validating principal competencies and performance indicators within the G.P.A.S. rests on the computation of relationships between ratings (perceptions) of the frequency and effectiveness of principal performances and criterion measures. This process allows for a delimiting of variables (both items and composites) from the original large set of verified competencies and performance indicators (n=338) that are significantly related to, and thus would more probably make a difference in the effective operation of a school. The process of

validation, as mentioned previously, seeks to go beyond the "verification" stage, by establishing statistical relationships (correlations) between variables within the G.P.A.S. design.

In the following sections of this report, results of validation analyses will be described in terms of the relationship between major Input and Mediating, and Input and Outcome variables, for elementary, secondary, and total school groups. For ease of interpretation and summarization of results, correlations between various PPDS Form "composites" and factors measured by the School Survey, My School, and Learning Environment Inventory will be reported. In addition, the relationship between PPDS Form composite scores and Outcome variables (Student Achievement and Average Daily Attendance) will be described. Where they lend better interpretation to the results, relationships between Mediating and Outcome, and Mediating and Mediating variables will be presented.

Two types of data tables will be used in describing the validation results. The first of these, the frequency of various PPDS Form items significantly correlated ($p. < .05$) with particular Mediating and Outcome variables, provides perhaps an accounting of the "global" sensitivity of the various competency assessment instruments to variations in Mediating and Outcome variables between schools in the sample. Where the frequency and percentage of significant correlations between a PPDS Form and given criterion measure is high, an interpretation in support of a predictive relationship seems justified. Where frequency and percentage of significant correlations figures are low, commonality between total PPDS Form item ratings and criterion measures is low, and predictive power of the PPDS Form minimized. The process of analyzing total PPDS Form item ratings and their relationship to criterion measures allows,

in essence, for an assessment and designation of Input sources in terms of the predictive power of their ratings of principal competence.

The second type of validation data table used consists of a summary report of the intercorrelations between various PPDS Form "composite" scores and Mediating and Outcome variables. Composite scores for each PPDS Form consisted of summary scores for all items within an Administrative Operation or Functional Area of Responsibility of the Rome Competency Classification Model, RCCM (see p. 5). On the PPDS Principal Form, for example, a composite score for each principal in the Functional Area of Responsibility of Curriculum and Instruction was computed by totaling either frequency or effectiveness ratings for all performance indicators classified originally as curriculum and instruction items. Similarly, total scores for all items classified as indicating the Administrative Operation of Planning, comprised the Planning composite score for an individual principal.

It might be noted that all performance indicators resulting from the verification survey were originally classified along the two dimensions of the RCCM described above. Therefore, a particular performance statement was classified in two ways, by Administrative Operation and Functional Area of Responsibility. The number of performance statements comprising composites of the various PPDS Forms can be found in Table 5, p. 27.

This second type of data table (intercorrelations between PPDS Form composites and Mediating and Outcome variables) provides a more meaningful picture of the relationship between groups of performance statements and criterion variables within the G.P.A.S. design. In contrast to the frequency and percentage of significant items correlations tables, the composite intercorrelations represent a more reliable measure of the relationship between particular facets of a

principal's assessed competence and criterion measures, owing to composite scores being based on multiple items, and thus exhibiting more variability between and across rating sources.. While not easily interpreted on an individual item basis, the composite correlations data are suggestive of competency "clusters" having individual items most probably significantly related to criterion variables.

Item intercorrelations between and within classes of variables in the G.P.A.S. design were computed, but are far too numerous to report here.[1] Where deemed appropriate for interpretation purposes, summaries of significant item correlations with criterion variables will be reported. In addition, specific performance items will be described where they lend better interpretation to composite and factor correlations.

CORRELATIONS BETWEEN PPDS-STUDENT FORM ITEMS AND MEDIATING VARIABLES

It will be recalled that the School Survey, My School, and Learning Environment Inventory instruments were described as general measures of teachers' occupational satisfaction and/or job-related attitudes, and elementary and secondary students' perception of school climate, respectively. These variables were classified as "mediating" variables within the G.P.A.S., serving as the medium through which the school principal's influence and functioning was transmitted to outcome variables. Thus it was hypothesized that PPDS-Student Form items would show higher relationships to mediating variables than to more traditional school outcome data, i.e., student achievement test scores and average daily

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[1] Individual item correlations with PPDS Form composites, LEI, My School, School Survey, Student Achievement, and ADA, are available upon request. The approximate number of inter item correlations produced in this field testing was 228,000.

attendance because of the greater degree of functional "directiveness" of principal performances involved. From the pool of 338 verified principal performance indicators, 14 were judged by R.O.M.E. assessment staff as relevant to students as a data source. These items were slightly changed in grammatical form so as to insure readability and maintain essential content and meaningfulness before instrument construction. The 14 PPDS-Student Form items are given below.

PPDS-Student Form Items

1. My principal talks with me about things I like to do.
2. My principal meets with parents and children to plan what we learn in school.
3. My principal talks with children about why they misbehave.
4. My principal talks with children about what will happen if they misbehave.
5. My principal talks with children during lunch and free time.
6. My principal treats children alike when they break rules.
7. My principal tells us how important it is to come to school every day.
8. My principal is easy to see when I want to talk to him about something important.
9. My principal gives us rules on how to behave in school.
10. My principal talks with my class when my class misbehaves.
11. My principal helps the teacher watch over us at school activities.
12. My principal goes to school activities.
13. My principal helps children when they misbehave.
14. When children misbehave my principal talks with them, their parents and teachers.

Ratings of Frequency (How Often) and Effectiveness (How Well) were gathered on each of the 14 item indicators from samples of elementary

and secondary students. Owing to the small number of items, composites were not constructed for this assessment instrument.

Relationships Between PPDS-Student Form Items and School Survey Factors

Summaries of the frequency of significant correlations between PPDS-Student Form items and School Survey factors are presented in Table 23. For elementary schools, 33 frequency and 15 effectiveness items significantly correlated with at least one of the fourteen School Survey factors. Since the .05 level of statistical significance was used, about 10 correlations would be expected to be significant by chance alone. It would appear that a modest relationship exists between these students' perceptions of the frequency and effectiveness with which the principal engages in certain activities and teachers' attitudes towards various dimensions and operations of the school and school system.

For secondary students the relationship appears less strong, with only 20 frequency and 15 effectiveness items showing significant relationships with the School Survey factors.

With regard to the School Survey factors themselves, the most outstanding factor in terms of a criterion appears to be Buildings and Facilities which had 6 of 14 (43%) frequency items and 10 of 14 (71%) effectiveness items as significant correlates for elementary students. For secondary students, the School Survey factors of Professional Work Load and Non-Professional Work Load are the most outstanding criterion variables for the two types of PPDS-Student Form ratings of principal performance.

Greater understanding of the relationships between PPDS-Student Form items and the dimensions of the School Survey can be gained by

TABLE 23
Frequency of PPDS - Student Form Items Significantly Correlated ($p < .05$) with School Survey Factors

School Survey Factors	Elementary Schools, N=36				Secondary Schools, N=9			
	How Often		How Well		How Often		How Well	
	f	χ^2	f	χ^2	f	χ^2	f	χ^2
1. Administrative Practices (9)[1]	-	-	-	-	1	7	-	-
2. Professional Work Load (9)	5	36	-	-	5	37	4	29
3. Non Professional Work Load (6)	3	21	1	7	4	29	5	37
4. Materials and Equipment (8)	3	21	1	7	1	7	-	-
5. Buildings and Facilities (7)	6	43	10	71	-	-	-	-
6. Educational Effectiveness (10)	4	29	1	7	-	-	-	-
7. Evaluation of Students (10)	4	29	1	7	-	-	-	-
8. Special Services (8)	2	14	-	-	-	-	-	-
9. School Community Relations (7)	2	14	-	-	1	7	-	-
10. Supervisory Relations (10)	1	7	-	-	1	7	1	7
11. Colleague Relations (7)	2	14	1	7	2	14	3	21
12. Voice in Educational Program (8)	-	-	-	-	2	14	-	-
13. Performance and Development (10)	-	-	-	-	2	14	2	14
14. Financial Incentives (9)	1	7	-	-	1	7	-	-
TOTAL	33	17	15	8	20	10	15	8

[1]Number of items in factor composite. School means used as sampling unit.
[2]Percent of maximum possible. Maximum possible = 14 (Individual factor correlations), 196 (Total correlations)

an examination of the individual item-factor correlations. Intercorrelations between items and School Survey factors for elementary students (schools) are presented in Tables 24 and 25 .

Observing the frequency rating correlations in Table 24, it can be seen that PPDS-Student Form items 1, 7, 9, and 10 show the largest number of significant correlations with the various School Survey factors. For predictive validity coefficients, the correlations are in the moderate range, accounting from approximately 10% to 32% of the variation in teachers' attitudes towards various dimensions of the school and its operation. It is interesting to note that the significant correlations are all negative in direction, indicating that the less frequently students report the principal engaging in certain activities with them, the more positive teacher job attitudes. Individual items can be identified by examining the ordered list on page 87.

Interpretation of these findings is difficult at best. However, what may be represented in the data is a general communications factor of principal--student interactions, since these items (1, 7, 9, 10) all focus on the principal discussing things with students. It may be the case that if there is nothing for the principal to discuss with students (or if he simply does not do this), matters are progressing well within the school, and teachers have the classroom and students under control. Conversely, from the students' and teachers' perspectives, the more frequently students see the principal as carrying out these functions in the school, the less satisfied teachers are with the various correlated dimensions of the school as measured by the School Survey.

TABLE 24
Intercorrelation between PPDS - Student Form Items (Frequency Rating) and School Survey Factors (Elementary Schools, N=36)

School Survey Factors	Student PPDS Items 1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Administrative Practices (9)[1]	-.28	-.06	.15	.12	-.11	.15	-.13	.22	-.16	-.22	-.10	-.09	-.08	.09
2. Professional Work Load (9)	-.43*	-.31	-.20	-.15	-.23	.01	-.44*	.12	-.37*	-.42*	-.14	.07	-.31	-.33*
3. Non Professional Work Load (6)	-.32	-.31	-.14	-.13	-.15	.01	-.42*	.17	-.38*	-.16	-.18	-.03	-.19	-.44*
4. Materials and Equipment (8)	-.23	-.26	-.12	-.21	-.28	-.19	-.16	.04	-.36*	-.27	-.09	.03	-.35*	-.42*
5. Buildings and Facilities (7)	-.55*	-.40*	-.10	.03	-.46*	-.12	-.50*	-.14	-.36*	-.20	-.24	-.13	-.48*	-.18
6. Educational Effectiveness (10)	-.57*	-.20	.08	.11	-.36*	-.20	-.38*	.09	-.04	-.39*	-.09	.07	-.30	-.05
7. Evaluation of Students (10)	-.53*	-.21	-.03	-.04	-.34*	.23	-.33*	-.01	-.11	-.40*	-.02	.09	-.32	-.11
8. Special Services (8)	-.43*	-.26	.07	-.00	-.12	.01	-.16	-.07	-.13	-.38*	-.01	.13	-.18	-.16
9. School Community Relations (7)	-.40*	-.16	-.04	-.06	-.18	.15	-.12	.09	-.24	-.38*	-.14	-.05	-.12	.08
10. Supervisory Relations (7)	-.32*	-.02	.02	-.08	-.06	.01	-.14	-.16	-.19	-.16	.14	.32	-.12	.15
11. Colleague Relations (7)	-.40	-.14	.04	-.09	-.02	.11	-.03	.12	-.11	-.45*	.18	.21	-.19	-.04
12. Voice in Educational Programs (8)	-.12	-.01	.14	-.07	-.02	.23	.02	.23	-.13	-.16	.05	.09	.03	.04
13. Performance and Development (10)	-.18	.15	.18	.19	-.02	.21	.09	.23	-.12	-.12	.09	.09	.13	.09
14. Financial Incentives (9)	-.39*	-.10	.09	-.14	-.10	.20	-.15	-.06	-.16	-.09	-.20	-.28	-.15	.31

[1]Number of items on scale
*Correlation significantly different from zero, $p < .05$

TABLE 25

Intercorrelation between PPDS - Student Form Items (Effectiveness Rating) and School Survey Factors (Elementary Schools, N=36)

School Survey Factors	Student PPDS Items													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Administrative Practices (9)[1]	-.10	-.01	.12	.07	-.12	.12	-.09	-.09	.13	-.11	-.10	-.18	.03	.12
2. Professional Work Load (9)	-.06	-.14	-.22	.23	-.20	.13	-.16	-.07	.13	-.13	.01	-.07	-.21	-.02
3. Non Professional Workload (6)	-.12	-.37*	-.21	-.12	-.24	.04	-.30	-.12	-.04	-.09	-.08	-.18	-.18	-.17
4. Materials and Equipment (8)	-.08	-.16	-.35*	-.22	-.18	-.05	-.09	-.10	-.02	-.16	-.10	-.09	-.27	-.30
5. Buildings and Facilities (7)	-.47*	-.40*	-.32*	-.16	-.56*	-.14	-.41*	-.34*	-.23	-.14	-.37*	-.37*	-.35*	-.34*
6. Educational Effectiveness (10)	-.24	-.11	.07	.18	-.38*	.20	-.15	-.23	.29	-.22	-.12	-.09	-.09	.03
7. Evaluation of Students (10)	-.27	-.23	-.08	.09	-.33*	.10	-.18	-.30	.16	-.30	-.17	-.15	-.12	-.07
8. Special Services (8)	-.21	-.28	-.23	.01	-.22	-.02	-.17	-.20	.08	-.26	-.16	-.16	-.14	-.23
9. School-Community Relations (7)	-.14	.04	.04	-.01	-.17	.15	-.03	-.13	.16	-.19	-.04	-.06	-.04	.06
10. Supervisory Relations (10)	.05	-.14	.09	.03	-.13	.17	.09	-.02	.19	.03	.15	.16	-.04	-.04
11. Colleague Relations (7)	-.01	.07	.04	.16	-.07	.16	.11	-.09	.33*	-.17	-.02	.06	-.01	.06
12. Voice in Educational Programs (8)	.01	.04	.15	.14	.04	.12	.08	-.06	.25	-.10	-.01	-.06	.13	.09
13. Performance and Development (10)	.07	.08	.23	.04	-.01	.25	.07	.04	.24	.09	.11	.08	.16	.03
14. Financial Incentive (9)	-.25	-.05	.13	.07	-.18	.08	-.19	-.23	.01	-.08	-.20	-.29	-.00	.17

[1]Number of items on scale

*Correlation significantly different from zero, $p < .05$

A similar pattern of correlations is depicted between the effectiveness ratings and dimensions of the School Survey (see Table 25), but no particular items show outstanding relationships with teacher job attitudes except the Buildings and Facilities factor. For this factor, 10 of the 14 student ratings were significantly correlated. Again, a more global "school-related" characteristic might be represented in these findings when combined with the frequency ratings correlations. It may be that in schools with poorer buildings and facilities (as measured by teachers' attitudes towards these), that students see the principal frequently and effectively involved in these performances.

Intercorrelations between PPDS-Student Form items and School Survey factors for secondary students are presented in Tables 26 and 27. The frequency ratings correlations in Table 26 and the effectiveness correlations in Table 27 are not consistent enough in terms of the number of significant correlations to allow for reliable conclusions. They are generally fewer in number than those for elementary students, though larger in magnitude, and opposite in direction. One of the problems in these computations of course is that the sample size, where the secondary school is the unit of analysis, is small, and correlations which appear large do not reach an acceptable level of statistical significance.

Comparing data in Table 26 and Table 27, some consistency does appear between students' frequency and effectiveness ratings of principal performances (items 3, 4, 10, and 13), and their intercorrelations with the School Survey factors of Professional Work Load and Non-Professional Work Load. Though the data are tenuous, it may be the case that secondary students see their principal as more frequently

TABLE 26
Intercorrelation Between Secondary Student PPDS Items (How Often)
and School Survey Factors
(Secondary Schools, N=9)

School Survey Factors	Student PPDS Items (How Often)													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Administrative Practices (9)[1]	.17	.25	.51	.63	.39	.36	.45	.25	.75*	.26	.18	.19	.27	.32
2. Professional Work Load (9)	.61	.69*	.73*	.68*	.44	.57	.46	.47	.37	.70*	.10	.10	.67*	.20
3. Non Professional Work Load (6)	.58	.61	.77*	.76*	.49	.62	.54	.47	.51	.68*	.19	.23	.67*	.31
4. Materials and Equipment (8)	.11	.31	-.12	-.31	-.24	-.22	-.39	.00	-.67*	.06	-.60	-.60	.03	-.47
5. Buildings and Facilities (7)	-.46	-.21	-.31	-.28	-.26	-.49	-.32	-.26	-.10	-.49	-.53	-.51	-.43	-.28
6. Educational Effectiveness (10)	.02	.13	-.03	-.09	.20	.51	-.27	.31	.09	-.14	.31	.24	.06	.63
7. Evaluation of Students (10)	.04	.07	.08	.12	.14	.38	-.05	.12	.20	.02	.17	.07	.06	.32
8. Special Services (8)	-.10	.16	-.11	-.17	-.22	-.04	-.38	-.09	-.30	-.08	-.53	-.63	-.11	-.20
9. School Community Interface (7)	.12	.06	.37	.50	.48	.51	.41	.30	.82*	.14	.59	.56	.18	.60
10. Supervisory Relations (10)	.37	.33	.59	.69*	.37	.56	.53	.27	.65	.52	.37	.31	.41	.35
11. Colleague Relations (7)	.44	.40	.58	.58	.56	.68*	.42	.53	.57	.38	.52	.60	.57	.70*
12. Voice in Educational Program (8)	.26	.18	.53	.71	.30	.31	.62	.12	.78*	.45	.38	.26	.27	.14
13. Performance and Development (10)	.64	.67*	.58	.49	.58	.68*	.30	.66	.38	.54	.48	.36	.61	.43
14. Financial Incentives (9)	-.63	-.51	-.53	-.41	-.27	-.23	-.45	-.33	.04	-.69*	.11	.20	-.61	.10

[1]Number of items in factor score. School means used as sampling unit
*Correlation significantly different from zero, $p < .05$

TABLE 27
Intercorrelations Between Secondary Student PPDS Items (How Well)
and School Survey Factors
(Secondary Schools, N=9)

School Survey Factors	Student PPDS Items (How Well) 1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Administrative Practices (9)[1]	.28	.20	.46	.42	.33	.46	.44	.21	.59	.30	.12	.25	.29	.14
2. Professional Work Load (9)	.48	.46	.72*	.72*	.40	.59	.49	.54	.64	.72*	.36	.18	.70*	.47
3. Non Professional Work Load (6)	.53	.47	.76*	.75*	.47	.65	.58	.55	.73*	.72*	.41	.31	.71*	.49
4. Materials and Equipment (8)	-.25	-.07	-.12	-.09	-.32	-.27	-.41	-.08	-.36	-.01	-.33	-.65	.01	-.07
5. Buildings and Facilities (7)	-.47	-.34	-.39	-.45	-.35	-.40	-.40	-.46	-.39	-.55	-.63	-.52	-.46	-.47
6. Educational Effectiveness (10)	.20	.30	.13	.07	.33	.47	-.12	.21	.27	.05	.20	.26	.11	.41
7. Evaluation of Students (10)	.10	.09	.17	.19	.17	.36	.00	.10	.31	.14	.06	.12	.13	.19
8. Special Services (8)	-.31	-.15	-.08	-.09	-.27	-.06	-.41	-.18	-.15	-.09	-.44	-.56	-.06	-.11
9. School Community Interface (7)	.40	.28	.38	.35	.48	.58	.46	.27	.64	.25	.36	.59	.21	.26
10. Supervisory Relations (10)	.41	.27	.58	.60	.36	.59	.54	.37	.69*	.57	.37	.38	.48	.32
11. Colleague Relations (7)	.62	.56	.64	.62	.67*	.72*	.56	.59	.73*	.53	.59	.64	.58	.61
12. Voice in Educational Program (8)	.29	.07	.43	.50	.22	.38	.57	.18	.61	.44	.24	.29	.28	.05
13. Performance and Development (10)	.60	.59	.62	.66	.56	.68*	.42	.62	.69*	.66	.55	.38	.59	.59
14. Financial Incentives (9)	-.44	-.39	-.49	-.52	-.26	-.20	-.47	-.50	-.27	-.61	-.48	-.21	-.58	-.37

[1]Number of items in factor score. School means used as sampling unit.
*Correlation significantly different from zero, $p < .05$

and effectively involved in these performances, and this perception is positively related to teachers' attitudes towards these School Survey dimensions. This may point to a difference between elementary and secondary principal performances and how they relate to teacher attitudes towards the school. It may be, for example, that principal competence in carrying out these performances from the students' point of view in secondary schools, generates better teacher attitudes (more positive) toward the school environment and the school's characteristics. This might imply that principals have a somewhat different role in secondary schools, actually carrying out these performances more often and more effectively than elementary principals, and this in turn, is associated with better teacher work attitudes.

Relationships Between PPDS-Student Form Items and School Climate and Learning Environment

Another set of variables within the G.P.A.S. considered to mediate between principal performance and school outcome measures are assessments of the general school climate or learning environment by students. For elementary students, the measure of this mediating variable was the 45 item, five factor My School (MS) inventory. For secondary students, the 105 item, 15 factor Learning Environment Inventory (LEI) was used.

Data in Table 28 summarize the number and percentage of elementary PPDS-Student Form items significantly correlated with My School factors. There appears to be a modest relationship between these two variables. For both the frequency (How Often) and effectiveness (How Well) ratings, the largest number of PPDS-Student Form items appears to be correlated with the scales of Satisfaction and Cohesiveness. The Friction scale, in addition, appears significantly related to a number of PPDS items. For this tabulation, 3.5 items would be predicted to correlate signifi-

TABLE 28
Frequency of PPDS - Student Form Items Significantly Correlated ($p < .05$) with My School Inventory Factors (Elementary Schools, N=36)

My School Factors	STUDENT PPDS ITEMS			
	How Often		How Well	
	f	%[1]	f	%[1]
Satisfaction	8	57	10	74
Friction	1	7	4	29
Competitiveness	-	--	1	7
Difficulty	2	14	2	14
Cohesiveness	7	50	4	29
TOTAL	18	23	21	30

Each factor score composite contains nine items. School means used as sampling unit.
[1] Percent of maximum (14) possible

cantly with at least one of the My School factors by chance alone, for either the frequency or effectiveness ratings.

Table 29 presents the number and percentage of secondary PPDS-Student Form items significantly correlated with factors of the Learning Environment Inventory. The LEI scales of Intimacy, Formality, Environment, Goal Direction, Apathy, Satisfaction, Disorganization, and Competitiveness show modest (21% of the total possible significant correlations) to large (79% of the total possible significant correlations) relationships with the PPDS-Student Form items. For the table totals, however, there appears to be a low moderate overall relationship with only 29% of the possible 210 correlations being statistically significant for the effectiveness scale (How Well), and only 21% of the possible 210 correlations being statistically significant for the frequency scale (How Often). These percentages may be contrasted to the 5% (10.5 total items) that would be expected to correlate with the LEI factors by chance alone. When comparing the two PPDS rating scales, there appears to be a relative balance between the frequency and effectiveness items and their global relationship to the Learning Environment Inventory scales.

Table 30 presents the intercorrelations between PPDS-Student Form items (Frequency and Effectiveness ratings) and the My School factors for elementary students (schools). For the table as a whole, the correlations appear to be predominantly negative in direction. This is not an unexpected finding since it must be remembered that the scores on the My School instrument must be interpreted in a direction opposite that of the factor label owing to the weighting scheme that was applied in originally keying the items. Thus, high scores on the Satisfaction scale should be interpreted as Dissatisfaction, Friction as Lack of Friction, Competetiveness as Cooperation,

TABLE 29
Frequency of PPDS - Student Form Items
Significantly Correlated ($p<.05$) with
Learning Environment Inventory Factors
(Secondary Schools, N=10)

	STUDENT EVALUATIONS OF PRINCIPAL		% of Maximum Possible	
LEI FACTORS	How Often	How Well	How Often	How Well
1. Intimacy	4	3	29	21
2. Diversity	1	4	7	29
3. Formality	5	3	37	21
4. Speed	2	1	14	7
5. Environment	5	8	37	57
6. Friction	2	---	14	---
7. Goal Direction	7	9	50	64
8. Favoritism	---	---	---	---
9. Difficulty	1	---	7	---
10. Apathy	9	11	64	79
11. Democratic	---	---	---	---
12. Cliqueness	---	---	---	---
13. Satisfaction	5	9	37	64
14. Disorganization	7	8	50	57
15. Competitiveness	6	4	43	29
TOTAL	54	60	21	29

Based on 10 schools and 3613 students using school means as the sampling unit.
Maximum possible = 14 (Individual Factor Correlations), 210 (Total Correlations)

TABLE 30

Intercorrelation between PPDS - Student Form Items
(Frequency and Effectiveness Ratings) and My School Factors
(Elementary Schools, N=36)

My School Factors	Student PPDS Items 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Satisfaction														
Frequency	-.50*	-.48*	-.10	.04	-.44*	-.43*	-.43*	-.63*	-.27	-.11	-.45*	-.32	-.55*	.08
Effectiveness	-.07	-.57	-.35	-.13	-.61*	-.44*	-.57*	-.61*	.55*	-.45*	-.72*	-.70*	-.41*	-.33*
Friction														
Frequency	-.06	.10	-.05	-.16	.01	.37*	.01	.30	.06	-.26	.11	.25	.16	-.03
Effectiveness	.35	.31	.24	.12	.21	.40*	.27	.26	.44*	.05	.52*	.52*	.19	.26
Competitiveness														
Frequency	-.20	-.13	-.06	-.24	-.19	.07	-.18	.12	-.15	-.26	-.08	.11	.06	-.25
Effectiveness	.27	-.01	.12	-.08	.10	.13	.02	.11	.16	.00	.26	.41*	.04	-.02
Difficulty														
Frequency	-.21	.04	.22	.24	.01	.34*	.01	.23	.35*	-.09	-.12	-.01	.06	.11
Effectiveness	.03	.22	.26	.40	.05	.41*	.16	.02	.54*	.06	-.03	.03	.27	.26
Cohesiveness														
Frequency	-.50*	-.44*	-.11	.04	-.40*	-.17	-.39*	-.41*	-.17	-.27	-.38*	-.25	-.37*	.04
Effectiveness	-.56	-.29	-.24	.10	-.50*	-.15	-.30	-.38*	-.24	-.25	-.45*	-.47*	-.17	-.10

*Correlation significantly different from zero, $p < .05$

Difficulty as Easiness, and Cohesiveness as Lack of Cohesiveness. By way of example, the negative correlations might be interpreted as follows: students' dissatisfaction with the school climate and their perception of lack of cohesiveness in the school environment is positively associated with a high frequency and effectiveness rating of principal-student interactions, particularly with regard to school rules, regulations, and behavior problems. In addition, the fact that a high degree of principal-student interaction is associated with general dissatisfaction and lack of cohesiveness, it also is associated with perceived friction in the school environment. In these schools, it appears that where students see the principal frequently and effectively carrying out the performances on which he was rated (PPDS-Student Form items), they perceive a lack of Cohesiveness, Organization, and Satisfaction with school, and more Friction.

The significant correlations between particular PPDS items and My School factors vary from a low of -.33 to a high of -.72, accounting for approximately 11% to 52% of the total variation in a particular My School factor. These represent low to above average coefficients for the validation process described in this report, though the actual number of significant correlations, as mentioned above, is moderate.

A summary of the intercorrelations between PPDS-Student Form items (frequency and effectiveness ratings) and factors of the Learning Environment Inventory is presented in Table 31 and Table 32 respectively. The LEI factors are numbered instead of named, and may be crossreferenced in numerical order with these in Table 29.

Considerable similarity in these two tables of intercorrelations is evident, with the general pattern for frequency rating correlations highly similar to that for the effectiveness ratings correlations.

TABLE 31
Intercorrelation Between PPDS - Student Form Items (How Often)
and Learning Environment Inventory Factors
(Secondary Schools, N=10)

PPDS - Student Form Items	Learning Environment Inventory Factors														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.73*	.42	.71*	-.78*	.88*	-.55	.85*	-.48	-.56	.94*	-.58	-.34	-.90*	.86*	.66*
2	.59	.23	.60	-.62	.74*	-.44	.63*	-.54	-.56	.67*	-.46	-.24	-.78*	.74*	.40
3	.51	.27	.64*	-.46	.61	-.08	.71*	-.20	-.34	.71*	-.27	-.13	-.62	.70*	.82*
4	.26	.22	.62	-.32	.43	-.21	.67*	-.22	-.37	.68*	-.27	-.07	-.48	.69*	.88*
5	.42	.54	.52	-.47	.63*	-.67*	.61	-.41	-.32	.76*	-.45	-.24	-.69*	.63*	.55
6	.44	.65*	.63*	-.28	.56	-.38	.56	-.28	-.07	.58	-.27	.14	-.61	.53	.52
7	.24	.26	.58	-.38	.45	-.43	.68*	-.26	-.45	.77*	-.34	-.12	-.51	.70*	.84*
8	.65*	.55	.58	-.62	.77*	-.40	.60	-.38	-.25	.69*	-.41	-.26	-.77*	.59	.46
9	-.10	.31	.51	-.09	.16	-.38	.39	-.29	-.15	.43	-.22	.02	-.24	.42	.67*
10	.63*	.22	.51	-.67*	.76*	-.26	.91*	-.41	-.57	.87*	-.50	.18	-.78*	.89*	.85*
11	.35	.72*	.66*	-.50	.53	-.56	.54	-.33	-.06	.66*	.44	-.11	-.52	.44	.59
12	.23	.59	.37	-.26	.42	-.71*	.37	-.26	-.19	.58	-.25	.02	-.46	.40	.34
13	.63	.43	.57	-.57	.77*	-.53	.71*	-.35	-.50	.84*	-.39	-.17	-.79*	.78*	.57
14	.19	.39	.05	.10	.02	.62	-.08	.44	.63*	-.14	.32	.21	.10	-.28	.15

*Correlation significantly different from zero, $p < .05$

TABLE 32
Intercorrelations Between PPDS - Student Form Items (How Well)
and Learning Environment Inventory Factors
(Secondary Schools, N=10)

PPDS - Student Form Items	Learning Environment Inventory Factors														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.59	.64*	.62	-.56	.74*	-.54	.68*	-.32	-.29	.82*	-.39	-.14	.76*	.67*	.62
2	.56	.56	.49	-.46	.70*	-.50	.52	-.33	-.27	.65*	-.30	-.07	-.72*	.56	.37
3	.51	.43	.62	-.41	.65*	-.34	.70*	-.28	-.35	.75*	-.29	-.03	-.69*	.73*	.70*
4	.53	.42	.66*	-.55	.69*	-.52	.80*	-.37	-.47	.88*	-.47	-.21	-.74*	.83*	.76*
5	.43	.64*	.43	-.35	.58	-.57	.47	-.24	-.17	.65*	-.26	-.06	-.61	.50	.43
6	.37	.61	.59	-.27	.53	-.44	.53	-.30	-.12	.59	-.27	-.09	-.58	.54	.53
7	.33	.41	.57	-.42	.54	-.57	.65*	-.30	-.43	.80*	-.35	-.12	-.59	.70*	.73*
8	.65*	.59	.58	-.56	.78*	-.50	.66*	-.32	-.33	.79*	-.36	-.12	-.79*	.67*	.53
9	.32	.53	.67*	-.37	.54	-.53	.66*	-.37	-.28	.73*	-.39	-.07	-.60	.67*	.72*
10	.64*	.42	.79*	-.66*	.78*	-.46	.88*	-.43	-.51	.91*	-.52	-.18	-.82*	.88*	.79*
11	.57	.68*	.62*	-.55	.72*	-.61	.64*	-.32	-.28	.81*	-.39	-.07	-.73*	.62	.55
12	.23	.61	.38	-.23	.42	-.69*	.39	-.23	-.17	.59	-.23	.06	-.47	.42	.38
13	.57	.44	.55	-.45	.70*	-.53	.69*	-.32	-.46	.80*	-.34	-.06	-.75*	.76*	.56
14	.67*	.67*	.48	-.42	.69*	-.25	.50	-.12	-.05	.59	-.17	.04	-.66*	.45	.37

*Correlation significantly different from zero, $p < .05$

Strong positive relationships seemingly exist between student ratings of frequency and effectiveness of principal performances and the LEI factors concerned with the general physical characteristics of the learning environment (Factor 5), the amount of perceived goal direction in classes (Factor 7), the amount of perceived apathy (Factor 10), the extent of perceived disorganization (Factor 14), and the amount of felt competetiveness (Factor 15). A strong negative relationship between the student item ratings and general satisfaction with school (Factor 13) is also evident. It appears from these data that the more students see principals effectively involved with the PPDS-Student Form performances (greater principal-student interaction), the more apathetic and disorganized they see the school environment, and the less satisfied they are with school. These trends seem to be, at the same time, associated with a positive attitude towards the general physical learning environment.

Among the LEI scales, the Apathy factor (10) correlates most strongly with items on the PPDS-Student Form, with 10 of 14 possible intercorrelations reaching the .05 level of statistical significance for the frequency ratings, and 11 items reaching the .05 level on the effectiveness ratings. Among particular PPDS items, item number 10 ("My principal talks with my class when my class misbehaves") correlates significantly with 8 of the 15 LEI factors for frequency ratings, and with 9 of the 15 LEI factors for effectiveness ratings. Similarly, PPDS item number 1 ("My principal talks with me about things I like to do") correlates significantly with 9 of the 15 LEI factors for frequency ratings, and with 6 of the LEI factors for effectiveness ratings.

As was the case with elementary schools, these correlations seemingly indicate that students' perceptions of their principal as frequently and effectively involved in these activities, are generally associated with a negative attitude towards school as measured by the LEI scales of Apathy, Satisfaction, and Disorganization.

Two possible interpretations of these findings emerge when comparing the intercorrelations for elementary and secondary schools. First, it may be the case that principals are more actively involved in these performances, (largely dealing with student behavior problems and informal student-principal interactions), in schools students see as apathetic, dissatisfying, and disorganized. Secondly, an alternative interpretation might center on the fact that schools having high quality environments (as perceived by students) require little principal-student interaction, particularly where discipline matters are concerned. High assessments of these principal performances by secondary students, are at the same time, associated with a positive attitude towards the factors of Goal Direction and general assessment of the physical school Environment (Factors 7 and 5 respectively).

In terms of magnitude (size of the correlation coefficients), the intercorrelations between PPDS-Student Form items and LEI factors for secondary students are somewhat higher than those for elementary students found in Table 30. A few comments are in order here. For secondary students' frequency ratings, significant correlations ranged from .94 to .63, accounting for approximately 88% to 40% of the total variation in an associated LEI factor. For secondary students' effectiveness ratings, significant correlations ranged from .91 to .62, accounting for approximately 83% to 38% of the total variation in an associated LEI factor. These correlations represent rather strong

relationships overall for the validation process described in this report, though the actual percentage of significant correlations approximates those for elementary students.

Given the sample size for secondary schools (n=10), it might be mentioned that a correlation between PPDS-Student Form ratings and a given LEI factor had to approximate .63 in order to reach statistical significance at the .05 level. Given a larger sample on which to base these correlations, it is reasonable to assume that they would decrease in magnitude somewhat (since more variation between schools would be assessed), though the actual number of significant correlations could stay approximately the same. In addition, another factor possibly affecting the magnitude of the correlations for secondary students is that the PPDS rating scale was more variable than that used for elementary students (4 point scale as opposed to 3 point scale).

If a general "halo" effect had been in operation for secondary students, i.e., if they tended to rate the principals' functioning and school environment as both high, or both low, then a larger number of significant correlations would seemingly have appeared in Tables 31 and 32.

In summary, even though the sample size is small for secondary students, the correlations may represent high quality data showing the general relationship between assessments of a principal's functioning by students and their perceptions of various dimensions of the school environment. This seems additionally supported when considering the fact that secondary students are older than elementary students, and probably more discriminating in their judgments. In the present study,

the age difference is about four years (nine years of age for fourth graders and 13 and 16 for eighth and eleventh graders respectively).

CORRELATIONS BETWEEN PPDS-STUDENT FORM ITEMS AND OUTCOME DATA: ACHIEVEMENT TEST PERFORMANCES AND SCHOOL AVERAGE DAILY ATTENDANCE

During this initial field testing of the G.P.A.S., it was hoped that student input data (ratings of principal performances) would, in addition to showing stable relationships with mediating variables (teacher attitude and school climate factors) also show meaningful relationships with outcome variables (standardized achievement test performance and school average daily attendance figures).

Table 33 presents the frequency of PPDS-Student Form items significantly correlated with subtests of the Iowa Tests of Basic Skills and Average Daily Attendance for elementary schools. For the elementary schools, 34 out of a possible 168 correlations (20.2%) were statistically significant for the achievement measure used. An average of 14% of the frequency ratings (How Often) and 26% of the effectiveness ratings (How Well) were significantly correlated with the ITBS subtests. While above what would be expected by chance alone (5%), these figures represent low total relationships between student ratings of principal performances and school achievement data. None of the PPDS-Student Form item ratings for elementary students correlated significantly with school average daily attendance figures.

Table 34 presents the frequency of PPDS-Student Form items significantly correlated with subtests of the Tests of Academic Progress (TAP) and Average Daily Attendance for secondary schools. For these schools, only two items showed significant relationships with student achievement, and only five showed significant relationships with school average daily attendance.

TABLE 33
Frequency of PPDS - Student Form Items Significantly Correlated ($p < .05$) with Iowa Tests of Basic Skills Scores and Average Daily Attendance
(Elementary Schools, N=35)

	Student PPDS Items			
	How Often		How Well	
ITBS SCORE	F	%[1]	F	%[1]
Vocabulary	1	7	3	21
Reading	3	21	5	36
Language	2	14	3	21
Work Study	2	14	6	43
Math	2	14	2	14
ITBS Total	2	14	3	21
TOTAL	12	14	22	26
School Average Daily Attendance *	--	--	--	--

School means used as sampling unit

[1]Percent of maximum (14) possible (Individual correlations), 84 (Total Correlations)

*Analyses based on a total of 36 schools

TABLE 34
Frequency of PPDS - Student Form Items
Significantly Correlated ($p < .05$) with
Reading and Math Sub-Tests of the
Test of Academic Progress
and Average Daily Attendance
(Secondary Schools, N=10)

Student Evaluations of Principal	Tests of Academic Progress				School Average Daily Attendance	
	Reading		Math			
	f	%	f	%	f	%
How Often	1	7	1	7	1	7
How Well	---	---	---	---	4	29

Based on 10 schools and 3613 students using school means as the sampling unit
Maximum possible = 14

While these data are difficult to interpret, it may be that the principal's influence (as seen by students) is far removed from these outcome measures for both elementary and secondary schools. Additionally, it may be that the kinds of PPDS-Student Form items (principal performance statements) used to assess principal behavior were not relevant for the criterion measures (outcome variables) used. This seems reasonable since stronger relationships between these student input data and various mediating variables were found, and are discussed in a later section of this report.

Tables 35 and 36 present intercorrelations between PPDS-Student Form items (frequency and effectiveness ratings respectively) and student achievement and average daily attendance data for elementary schools. Examining Table 35, it appears that the frequency ratings for item 1 were consistently correlated with student achievement measures. This item, which is generally concerned with the frequency with which students' report the principal as talking to them about what they like to do in school, is consistently and negatively correlated with achievement test performance. Again, while difficult to interpret, these significant negative correlations may indicate the presence of an "independence" factor with the implication that if the student is left alone (i.e., not frequently interacting on a personal level with the principal) he better attends to the academic tasks at hand. Conversely, since the correlations are all negative, it may be principals <u>do</u> interact more frequently with students in schools having associated low achievement test scores. Thus, this particular principal performance, (talking with students about what they like to do in school) may be a more important performance for a principal to carry out frequently in the low achieving school environment.

TABLE 35

Intercorrelation Between PPDS - Student Form Items
(Frequency Rating) and Student Achievement and Average Daily Attendance
(Elementary Schools, N=35)

IOWA TESTS OF BASIC SKILLS SUBTESTS	Student PPDS Items ("How Often")													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Vocabulary	-.58*	-.30	.25	.21	-.28	.2[illegible]	-.29	.08	.14	-.25	-.31	-.02	-.26	.17
Reading	-.62*	-.32	.24	.20	-.33*	.18	-.38*	.04	.09	-.24	-.24	-.05	-.31	.14
Language	-.60*	-.26	.23	.20	-.33*	.22	-.28	.12	.12	-.30	-.23	.00	-.24	.16
Work Study Skills	-.64*	-.35*	.24	.25	-.32	.28	-.30	.03	.11	-.32	-.29	-.10	-.27	.20
Math	-.62*	-.31	.20	.14	-.32	.27	-.23	.06	.08	-.34*	-.29	-.02	-.23	.19
Battery Total	-.60*	-.31	.28	.26	-.32	.25	-.31	.11	.11	-.25	-.34*	-.07	-.26	.20
% AVERAGE DAILY ATTENDANCE**	-.18	-.02	.03	-.04	-.09	.05	-.21	.12	.01	.00	-.19	.08	-.31	-.20

*Correlation significantly different from zero, $p < .05$
**Based on data from 36 schools

TABLE 36

Intercorrelation Between PPDS - Student Form Items
(Effectiveness Rating) and Student Achievement and Average Daily Attendance
(Elementary Schools, N=35)

IOWA TESTS OF BASIC SKILLS SUBTESTS	Student PPDS Items ("How Well")													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Vocabulary	-.35*	-.11	.18	.36*	-.39*	.18	-.09	-.22	.37*	-.16	-.33*	-.17	.07	.16
Reading	-.38*	-.18	.15	.36*	-.43*	.14	-.20	-.36*	.33*	-.16	-.32	-.21	.02	.14
Language	-.32	-.06	.22	.40*	-.38*	.22	-.06	-.28	.41*	-.13	-.24	-.11	.11	.18
Work Study Skills	-.37*	-.09	.20	.41*	-.40*	.27	-.11	-.33*	.37*	-.19	-.33*	-.22	.10	.21
Math	-.27	-.04	.21	.32	-.35*	.29	-.03	-.26	.40*	-.13	-.25	-.08	.13	.16
Battery Total	-.32	-.07	.21	.37*	-.37*	.21	-.10	-.31	.36*	-.11	-.30	-.17	.08	.21
% AVERAGE DAILY ATTENDANCE **	-.13	-.13	-.11	.11	-.12	-.04	-.14	-.17	.13	-.15	-.21	-.15	-.17	.00

*Correlation significantly different from zero, $p < .05$
**Based on data from 36 schools

Table 36 presents the intercorrelations between elementary students' effectiveness ratings of principal performances and school outcome measures. These data suggest that effectiveness ratings for three items (principal performances), 4, 5, and 9, were consistently, and significantly correlated with student achievement measures. These data seem to indicate that if a principal is seen as effectively talking with students (1) about behavior problems, (2) about school rules and regulations, but (3) not during lunch and free time, that somehow this will be associated with higher student achievement. As with the frequency rating correlation data presented in Table 35, it may be that these particular performances, and the effectiveness with which principals' carry them out, are more important in the low achieving school situation.

For elementary students in the sample, none of the frequency or effectiveness item ratings of principal performance were significantly correlated with school average daily attendance figures.

Table 37 presents the intercorrelations between PPDS-Student Form item ratings (frequency and effectiveness ratings) and student achievement and average daily attendance for secondary schools. As noted previously, only two correlations were found to be significantly correlated with subtests of the Tests of Academic Progress. Both of these were frequency ratings. These two negative correlations (though possibly representing chance occurrences) are for item 10, which again is concerned with principal-student interaction regarding behavior problems. An interpretation similar to that provided for elementary students above seems in order, though the relationships appear stronger for secondary students if the correlations are considered real rather than chance effects.

TABLE 37

Intercorrelations Between PPDS - Student Form Items (How Often and How Well) and Student Achievement and Average Daily Attendance (Secondary Schools, N=10)

PPDS - Student Form Items	Tests of Academic Progress					
	Reading		Math		% Average Daily Attendance	
	How Often	How Well	How Often	How Well	How Often	How Well
1	-.59	-.32	-.59	-.32	.61	.60
2	-.54	-.22	-.53	-.20	.41	.51
3	-.54	-.44	-.59	-.45	.62	.63*
4	-.57	-.54	-.60	-.55	.42	.60
5	-.30	-.13	-.30	-.12	.41	.49
6	-.10	-.14	-.10	-.14	.65*	.56
7	-.59	-.50	-.60	-.50	.27	.34
8	-.26	-.32	-.28	-.32	.59	.64*
9	-.29	-.35	-.30	-.36	.05	.48
10	-.73*	-.60	-.75*	-.61	.59	.65*
11	-.12	-.27	-.12	-.26	.38	.53
12	-.11	-.10	-.07	-.07	.21	.26
13	-.50	-.44	-.49	-.43	.58	.59
14	.44	-.05	.36	-.06	.58	.78*

*Correlation significantly different from zero, $p < .05$

The data in Table 37 indicate that there was no systematic pattern to the five significant intercorrelations between student items and average daily attendance figures, except to note that they all concerned students' ratings of performances centering on behavior problems and rules, were all positive in direction, and that four of the five correlations were for the effectiveness dimension. It is interesting to note that for item 10 (My principal talks with my class when my class misbehaves), frequency ratings were negatively correlated with student achievement, and effectiveness ratings were positively related to average daily attendance.

CORRELATIONS BETWEEN PPDS-TEACHER FORM ITEMS AND COMPOSITES AND MEDIATING VARIABLES

As was the case with analysis of student data, the School Survey, My School, and Learning Environment Inventory instruments were used as measures of the mediating variables of teacher occupational satisfaction and job-related attitudes, and elementary and secondary students assessment of school climate. The focus of data reported in this section of the report is on the relationship between teachers' ratings of principal competencies and performance indicators and mediating variables within the G.P.A.S.

The PPDS-Teacher Form instrument contained 117 items (principal performance statements which were rated by teachers (N=1200) relative to their perception of how frequently and effectively a given principal exhibited the behavior. These 117 items were classified into subscales or "composites" according to categories of the ROME Competency Classification Model previously described (p.5). The subscale labels and the number of items comprising each subscale are given below.

Functional Area of Responsibility	Number of Items
Curriculum and Instruction	35
Staff Personnel	40
Pupil Personnel	17
Support Management	0
School Community Interface	1
Fiscal Management	9
System-Wide Policies and Operations	15
TOTAL	117

Administrative Operation	
Data Collection	13
Planning	7
Communicating	74
Decision Making	0
Implementing	21
Evaluating	2
TOTAL	117

It might be noted that no verified competency indicators were available and subsequently no items or subscales were developed on the PPDS-Teacher Form for the Functional Area of Support Management and the Administrative Operation of Decision-Making. Of the 338 items surviving the verification survey which were classified by ROME staff into various Input sources, no items for these subscales emerged.

Analyses of the correlations between PPDS-Teacher Form items and composites and mediating and outcome variables were conducted separately for elementary, secondary, and total schools. School means were used as the unit of data analysis.

Relationships Between PPDS-Teacher Form Ratings and School Survey Factors

Data described in this section summarize the intercorrelations between teacher ratings of principal performances and the fourteen factors of the School Survey (a measure of teacher job-related attitudes).

Summaries of the frequency of significant correlations between the 117 items of the PPDS-Teacher Form instrument and the 14 School Survey factor scores for elementary schools are presented in Table 38. Moderately strong relationships apparently exist between these variables with 42% of the frequency ratings and 64% of the effectiveness ratings showing non-chance correlations with the various School Survey factors. Several School Survey factors show large numbers of significant correlations with PPDS-Teacher Form items, e.g., Administrative Practices, Educational Effectiveness, School Community Relations, Supervisory Relations, Voice in Educational Program, and Performance and Development.

One trend for these factors is that they relate more strongly in each case to effectiveness ratings than frequency ratings with the exception of the Financial Incentives factor. Quite large discrepancies between the number of frequency and effectiveness ratings significantly correlated with the School Survey factors of Professional Work Load, Educational Effectiveness, and Evaluation of Students exist. For the Educational Effectiveness factor, for example, 46 more effectiveness ratings of principal performances were significantly correlated than frequency ratings. These trends may well indicate that the effectiveness with which teachers see principals carrying out certain performances is a more important variable related to certain dimensions of job-satisfaction than the mere frequency with which he performs certain tasks.

Summaries of the frequency of significant correlations between the 117 items of the PPDS-Teacher Form and the School Survey factors for secondary schools are presented in Table 39. These correlations are considerably less strong with only 28% and 29% of the PPDS-Teacher

TABLE 38

Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated ($p < .05$) with School Survey Factors (Elementary Schools, N=36)

School Survey Factors	PPDS - Teacher Form Ratings		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
1. Administrative Practices (9)[2]	79	104	68	89
2. Professional Work Load (9)	8	50	7	43
3. Non Professional Work Load (6)	6	40	5	34
4. Materials and Equipment (8)	17	46	14	39
5. Buildings and Facilities (7)	2	6	2	5
6. Educational Effectiveness (10)	52	98	44	84
7. Evaluation of Students (10)	45	89	39	76
8. Special Services (8)	52	69	44	59
9. School Community Relations (7)	71	94	61	80
10. Supervisory Relations (10)	89	113	76	97
11. Colleague Relations (7)	40	78	34	67
12. Voice in Education Program (8)	99	114	85	97
13. Performance and Development (10)	105	112	90	96
14. Financial Incentives (9)	29	27	25	23
Total	694	1,040	42	64

[1]Maximum number of correlations = 117 (Individual), 1,638 (Total)

[2]Number of items on scale

TABLE 39
Frequency of PPDS - Teacher Form Items
(Frequency and Effectiveness Ratings) Significantly
Correlated ($p < .05$) with School Survey Factors
(Secondary Schools, N=9)

School Survey Factors	PPDS Teacher Form Ratings		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
1. Administrative Practices (9)[2]	27	33	23	28
2. Professional Work Load (9)	47	27	40	23
3. Non Professional Work Load (6)	52	50	44	43
4. Materials and Equipment (8)	1	8	1	7
5. Buildings and Facilities (7)	1	1	1	1
6. Educational Effectiveness (10)	22	12	19	10
7. Evaluation of Students (10)	27	23	23	20
8. Special Services (8)	1	0	1	0
9. School Community Relations (7)	23	31	20	26
10. Supervisory Relations (10)	49	65	42	56
11. Colleague Relations (7)	67	95	57	81
12. Voice in Educational Program (8)	47	57	40	49
13. Performance and Development (10)	95	74	81	63
14. Financial Incentives (9)	6	2	5	2
TOTAL	465	478	28	29

[1]Maximum possible number of correlations = 117 (Individual), 1638 (Total)
[2]Number of items on scale

Form items showing non-chance relationships with the School Survey factors, for frequency and effectiveness ratings respectively. The smaller number of significant correlations can in part be attributed to the small sample size (9 schools) resulting in reduced variability. Only two factors of the School Survey show potential from these data as criterion variables. These factors are Colleague Relations and Performance and Development. When contrasting elementary and secondary analyses, it is interesting to note that the number of significant correlations for the Colleague Relations factor of the School Survey is higher for secondary teachers.

The frequency of significant correlations between PPDS-Teacher Form items and School Survey factors for the total sample is presented in Table 40. When the data from all schools are analyzed together, a very strong pattern of significant item correlations emerges with 58% and 71% of the PPDS-Teacher Form frequency and effectiveness item ratings significantly correlated with the School Survey factors. This increase is attributed in part to increased variability from the combining of schools, and provides some support for the rationale for low percentages for the secondary schools mentioned above.

For the total sample, the following School Survey factors show large numbers of significant correlations with teachers' assessments of the frequency and effectiveness with which principals carry out particular performances: 1, 6, 7, 9, 10, 11, 12, 13. These data strongly indicate that the School Survey, as a measure of variables assumed to mediate the general school environment, is a viable criterion to which teachers' assessments of principals' functioning can be related. The nature of the frequency of significant correlations tables can be more specifically and meaningfully examined by an analysis

TABLE 40
Frequency of PPDS - Teacher Form Items
(Frequency and Effectiveness Ratings) Significantly
Correlated ($p < .05$) with School Survey Factors and
% Average Daily Attendance (N=44)[1]

School Survey Factors	Teacher PPDS Items		% of Maximum Possible[3]	
	Frequency	Effectiveness	Frequency	Effectiveness
1. Administrative Practices (9)[2]	94	104	80	89
2. Professional Work Load (9)	36	83	31	71
3. Non Professional Work Load (9)	54	80	46	68
4. Materials and Equipment (8)	21	29	18	25
5. Buildings and Facilities (7)	6	6	5	5
6. Educational Effectiveness (10)	73	104	62	89
7. Evaluation of Students (10)	76	104	65	89
8. Special Services (8)	66	71	56	61
9. School Community Relations (7)	89	109	76	93
10. Supervisory Relations (10)	103	116	88	99
11. Colleague Relations (7)	80	101	68	86
12. Voice in Educational Programs (8)	110	116	94	99
13. Performance and Development (10)	109	113	93	97
14. Financial Incentives (9)	33	34	28	29
TOTAL	950	1170	58	71
% Average Daily Attendance	38	41	32	35

[1] Based on 35 elementary and 9 secondary schools using school means as the sampling unit
[2] Number of items on scale
[3] Maximum possible number of correlations = 117 (Individual), 1638 (Total)

of PPDS-Teacher Form composite correlations and School Survey factor scores.

It was noted earlier that the PPDS-Teacher Form items were grouped into subscale composites corresponding to six Functional Areas of Responsibility and five Administrative Operations. The intercorrelations between these two sets of subscale composites for frequency and effectiveness ratings, and School Survey factors for elementary schools are presented in Tables 41 and 42 respectively. The data summarized in these two tables are interpreted as indicating moderately strong relationships between teachers' assessments of principal performances in a variety of areas, and their general attitudes towards various dimensions of their jobs. Among these correlations, it was found that 56% of the Functional Area/School Survey and 66% of the Administrative Operation/School Survey correlations were significantly different from zero. The School Survey factors of Professional Work Load (2), Non-Professional Work Load (3), Materials and Equipment (4), Buildings and Facilities (5), and Financial Incentives (14), are not, however, considered generally predictable from teachers' assessments of principals' functioning. This seems reasonable since teachers' attitudes towards these dimensions of their school and work experiences may have more in common with (be more determined by) central office personnel and school system regulations. The remaining correlations show reasonably stable and moderately strong patterns of relationships.

In comparing Table 41 and Table 42, it appears that the School Survey factors found not likely to show promise as mediating criteria for the Functional Area composites are, in addition, not likely to show promise for the Administrative Operations composites. For the two tables, it appears that a rather strong pattern of relationships

TABLE 41

Intercorrelation between PPDS - Teacher Form Composites
Functional Areas of Responsibility (Frequency and Effectiveness)
and School Survey Factors (Elementary Schools, N=36)

PPDS - Teacher Composites	School Survey Factors													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Curriculum and Instruction (35)[1]														
Frequency	.51	.14	.10	.31	.06	.37*	.42*	.43*	.45*	.64*	.30	.67*	.71*	.22
Effectiveness	.56*	.23	.19	.34*	.15	.50*	.54*	.50*	.53*	.75*	.43*	.69*	.74*	.29
Staff Personnel (40)														
Frequency	.60*	.16	.08	.31	.10	.40*	.45*	.45*	.59*	.65*	.43*	.70*	.75*	.41*
Effectiveness	-.23	-.32	-.46*	-.34*	-.21	-.13	-.25	-.28	-.16	-.26	-.23	-.18	-.26	-.16
Pupil Personnel (17)														
Frequency	.49*	.16	.09	.19	.06	.44*	.45*	.31	.48*	.57*	.26	.55*	.65*	.36*
Effectiveness	.49*	.24	.19	.27	.13	.56*	.54*	.38*	.47*	.72*	.38*	.59*	.68*	.30
School-Community Interface (1)														
Frequency	.35*	-.05	-.14	.18	-.17	.19	.22	.32	.31	.39*	.39*	.38*	.49*	.18
Effectiveness	.52*	.15	.04	.24	.07	.48*	.49*	.37*	.52*	.57*	.41*	.55*	.57*	.29
Fiscal Management (9)														
Frequency	.38*	.14	.07	.19	.06	.35*	.35*	.38*	.39*	.60*	.35*	.60*	.53*	.30
Effectiveness	.40*	.18	.10	.23	.10	.44*	.42*	.37*	.42*	.67*	.43*	.60*	.53*	.29
System Wide Policy & Operations (15)														
Frequency	.44*	.02	.03	.13	-.08	.23	.26	.28	.41*	.53*	.19	.66*	.64*	.34*
Effectiveness	.57*	.23	.17	.27	.11	.47*	.46*	.43*	.52*	.72*	.40*	.73*	.74*	.38*

1 Numbers in parenthesis represent number of items in scale composite. School means used as sampling unit.

* Correlation significantly different from zero, $p < .05$

TABLE 42
Intercorrelation Between PPDS - Teacher Form Composite Administrative Operations (Frequency and Effectiveness) and School Survey Factors (Elementary Schools, N=36)

PPDS - Teacher Composites	School Survey Factors 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (13)[1]														
Frequency	.56*	.18	.14	.26	.04	.33*	.41*	.36*	.52*	.67*	.39*	.65*	.68*	.35*
Effectiveness	.55*	.21	.16	.26	.08	.45*	.48*	.39*	.54*	.74*	.45*	.63*	.67*	.34*
Planning (7)														
Frequency	.43*	.12	.26	.30	.14	.38*	.39*	.46*	.35*	.65*	.18	.61*	.58*	.15
Effectiveness	.54*	.28	.34*	.39*	.28	.57*	.55*	.55*	.47*	.76*	.37*	.63*	.68*	.23
Communicating (74)														
Frequency	.52*	.13	.05	.25	.03	.40*	.43*	.41*	.51*	.64*	.35*	.69*	.72*	.35*
Effectiveness	.55*	.23	.15	.31	.13	.53*	.53*	.47*	.54*	.76*	.48*	.69*	.74*	.36*
Implementing (21)														
Frequency	.59*	.19	.18	.34*	.18	.37*	.39*	.53*	.55*	.63*	.35*	.73*	.74*	.37*
Effectiveness	.63*	.29	.29	.42*	.29	.52*	.55*	.58	.61*	.77*	.47*	.74*	.77*	.38*
Evaluating (2)														
Frequency	.33*	.12	.06	.30	.08	.16	.27	.22	.31	.47*	.30	.47*	.55*	.07
Effectiveness	.43*	.27	.21	.33*	.14	.43*	.45	.34*	.47*	.73*	.48*	.52*	.63*	.21

1 Numbers in parenthesis represent number of items in scale composite. School means used as sampling unit.
* Correlation significantly different from zero, $p < .05$

exists between frequency and effectiveness ratings and their correlations with various School Survey factors. In most cases where effectiveness ratings for a PPDS-Teacher Form composite were significantly correlated with a given School Survey factor, so were the corresponding frequency ratings. With regard to the Functional Areas of Responsibility in Table 41, the frequency rating for School Community Interface seems the weakest predictor, possibly owing to the fact that only one item made up this particular composite. It also appears that the weakest predictor for the Administrative Operations in Table 42 is the frequency scale for Evaluating.

Tables 43 and 44 present the intercorrelations between PPDS-Teacher Form composites (frequency and effectiveness ratings) by Functional Area of Responsibility and Administrative Operations respectively, and School Survey factors for secondary schools. When compared to data for elementary schools, the relationships are relatively less strong with a total of 26% of the correlations of Table 43 (Functional Areas) significantly different from zero, and 38% of the correlations for Table 44 (Administrative Operations) significantly different from zero. Though lower in overall Table percentages, data for secondary schools are similar in trend (Administrative Operations having the larger number of correlates) to data for elementary schools.

Functional Area composites for this sample (N=9) do not show particularly stable predictive validity across School Survey factors. The number of significant correlations for particular Functional Area composite ratings (frequency and effectiveness) across School Survey factors varies from a low of 3 (School Community Interface) to a high of 13 (Curriculum and Instruction).

TABLE 43

Intercorrelations Between PPDS - Teacher Form Composites by Functional Areas of Responsibility (Frequency and Effectiveness Ratings) and School Survey Factors (Secondary Schools, N=9)

Teacher - PPDS Composites	School Survey Factors 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Curriculum & Instruction (30)[1]														
Frequency	.61	.72*	.77*	-.21	-.37	.46	.48	.04	.58	.73*	.84*	.65	.89*	-.16
Effectiveness	.76*	.80*	.85*	-.16	-.24	.55	.67*	.27	.65	.85*	.86*	.77*	.94*	.04
Staff Personnel (40)														
Frequency	-.37	-.46	-.56	.37	.54	-.58	-.61	.03	-.42	-.67*	-.93*	-.57	-.67*	-.04
Effectiveness	-.34	-.43	-.53	.37	.56	-.57	-.59	.06	-.40	-.65	-.92*	-.54	-.64	-.02
Pupil Personnel (17)														
Frequency	.58	.66*	.66*	-.12	-.21	.40	.38	.11	.56	.65	.60	.61	.81*	-.11
Effectiveness	.71*	.82*	.82*	-.02	-.17	.39	.50	.27	.55	.76*	.68*	.71*	.90*	-.10
School Community Interface (1)														
Frequency	.10	.36	.28	.19	-.25	.60	.43	.26	.17	.28	.41	.17	.78*	.23
Effectiveness	.45	.45	.48	-.27	-.35	.60	.54	.01	.60	.59	.70*	.58	.87*	.09
Fiscal Management (9)														
Frequency	.45	.44	.46	-.12	-.24	.76*	.73*	.25	.52	.56	.73*	.51	.90*	.30
Effectiveness	.63	.52	.56	-.13	-.09	.73*	.77*	.35	.60	.65	.75*	.64	.90*	.38
System-Wide Policies and Operations (15)														
Frequency	.53	.45	.50	-.31	-.25	.60	.51	-.01	.61	.59	.78*	.59	.83*	.12
Effectiveness	.66*	.62	.67*	-.23	-.22	.64	.66*	.18	.63	.73*	.86*	.70*	.91*	.16

[1]Number of items in composite

*Correlation significantly different from zero, $p < .05$

TABLE 44

Intercorrelation Between PPDS - Teacher Form Composites by Administrative Operation (Frequency and Effectiveness Ratings) and School Survey Factors (Secondary Schools, N=9)

PPDS - Teacher Composites	School Survey Factors													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (13)[1]														
Frequency	.43	.51	.55	-.28	-.45	.71*	.60	.05	.58	.66*	.80*	.55	.87*	.07
Effectiveness	.61	.67*	.70*	-.14	-.29	.72*	.73*	.29	.60	.76*	.83*	.66*	.95*	.15
Planning (7)														
Frequency	.81*	.60	.70*	-.44	-.18	.42	.53	.00	.83*	.79*	.77*	.84*	.78*	.12
Effectiveness	.86*	.65	.76*	-.40	-.15	.52	.66*	.14	.84*	.85*	.83*	.86*	.82*	.21
Communicating (74)														
Frequency	.52	.66	.67*	-.14	-.33	.47	.43	.05	.53	.64	.74*	.57	.89*	-.15
Effectiveness	.72*	.75	.79*	-.12	-.19	.51	.60	.24	.61	.77*	.80*	.73*	.94*	.03
Implementing (21)														
Frequency	.56	.58	.59	-.13	-.17	.43	.40	.07	.58	.56	.62	.55	.86*	-.05
Effectiveness	.77*	.73*	.75*	-.11	-.10	.50	.60	.29	.66*	.76*	.71*	.76*	.92*	.10
Evaluating (2)														
Frequency	.43	.59	.61	-.19	-.49	.65	.61	.11	.56	.71*	.72*	.59	.90*	-.01
Effectiveness	.41	.37	.47	-.52	-.54	.78*	.63	-.10	.73*	.67*	.82*	.52	.75*	.16

[1]Number of items in composite

*Correlation significantly different from zero, $p < .05$

For the Curriculum and Instruction composite, strong, positive relationships exist between teachers' assessment of the frequency and effectiveness of the principal's performance in this area and their attitudes towards Professional Work Load (2), Non-Professional Work Load (3), Supervisory Relations (10), Colleague Relations (11), and opportunities for professional Performance and Development (13). It is interesting to note that high frequency and effectiveness ratings by secondary teachers of the principal's efforts in the area of Staff Personnel were associated with low attitudes concerning Colleague Relations (11) and Performance and Development (13). These correlations are somewhat opposite in direction and higher in magnitude than those for elementary schools. Conversely, the principal's Fiscal Manangement competencies are apparently positively associated with teacher attitudes toward professional growth opportunities (13), Colleague Relations (11), Evaluation of Students (7), and the secondary schools' general Educational Effectiveness (6). In addition, the principal's competence in carrying out performances related to System-Wide Policies and Operations is significantly and positively related to teacher attitudes towards Colleague Relations (11), and opportunities within the school and system for professional Performance and Development (13).

One outstanding finding represented in Table 43, is the fact that teacher assessments of the frequency and effectiveness with which the principal functions in all Functional Areas of Responsibility is significantly related to their perception of professional growth opportunities (School Survey factor 13). Similar findings are reflected in the corresponding table for elementary schools. In addition, these same findings appear for the School Survey factors of Colleague Relations (11) and Supervisory Relations (10).

When the Administrative Operations School Survey correlations are considered (Table 44), composite ratings (frequency and effectiveness) vary from a relatively high number of a significant correlations for Planning (15) to a low of 8 significant correlations for Evaluating. Again, it appears that when PPDS-Teacher Form items are classified by Administrative Operation rather than Functional Area, that Teachers' assessment of the principal's competence in these processes is consistently, highly, and positively related to their attitudes towards opportunities for professional growth and development (13), Colleague Relations (11), Supervisory Relations, and Non-Professional Work Load (3). It appears that these School Survey factors are potent mediating criteria to which to relate assessment of principal performances by teachers in secondary schools.

Tables 45 and 46 present the intercorrelations between PPDS-Teacher Form composites by Functional Areas and Administrative Operations respectively (frequency and effectiveness ratings), and School Survey factors for the total sample. When the elementary and secondary schools are combined, yielding a total sample for data analysis purposes of 44, strong relationships between the PPDS-Teacher Form composites and the School Survey Factors are obvious. The Functional Area composites yielded a total of 66% significant correlations, and the Administrative Operations composites showed a total of 81% significant corelations. The weakest Functional Area composite appears to be the 40 item Staff Personnel scale with only eight out of 28 possible correlations significantly different from zero. It is interesting to note with regards to this scale, however, that the significant Staff Personnel correlates are without exception negative, indicating that assessments of principals' competencies for this composite in this sample by teachers

TABLE 45

Intercorrelation Between PPDS - Teacher Form Composites (Frequency and Effectiveness Ratings) by Functional Area of Responsibility and School Survey Factors and Average Daily Attendance (N=44)[1]

Teacher PPDS Composites	School Survey Factors 1	2	3	4	5	6	7	8	9	10	11	12	13	14	% Average Daily Attendance
Curriculum and Instruction (35)[2]															
Frequency	.57*	.29*	.36*	.29	.14	.42*	.48*	.45*	.51*	.61*	.47*	.59*	.77*	.22	.40*
Effectiveness	.61*	.37*	.42*	.30	.17	.53*	.59*	.49*	.57*	.73*	.55*	.65*	.80*	.28	.37*
Staff Personnel (40)															
Frequency	-.12	-.20	-.36*	.09	.06	-.22	.25	.04	.13	-.22	-.37*	-.14	-.28	-.03	-.46*
Effectiveness	-.27	-.34*	-.47*	-.20*	-.10	-.24	-.34	-.23	-.22	-.36*	-.37*	-.26	-.36*	-.18	-.30*
Pupil Personnel (17)															
Frequency	.54*	.32*	.37*	.25	-.19	.46*	.47*	.38*	.51*	.51*	.44*	.45*	.72*	.31*	.44*
Effectiveness	.56*	.40*	.45*	.29	.20	.54*	.56*	.43*	.51*	.67*	.50*	.54*	.75*	.27	.43*
School Community Interface (1)															
Frequency	.37	.04	.01	.22	-.07	.28	.30*	.36*	.34*	.36*	.44*	.33*	.55*	.22	16
Effectiveness	.54	.24	.21	.23	.19	.52*	.53*	.38*	.56*	.54*	.51*	.50*	.65*	.30*	.31*
Fiscal Management (9)															
Frequency	.39*	.18	.14	.14	.02	.41*	.41*	.35*	.41*	.59*	.37*	.58*	.56*	.32*	.17
Effectiveness	.42*	.22	.18	.16	.06	.47*	.46*	.34*	.43*	.67*	.43*	.60*	.57*	.13*	.17
System Wide Policies and Operations (15)															
Frequency	.47*	.11	.18	.08	-.04	.31*	.33*	.27	.46*	.54*	.31*	.62*	.68*	.34*	.20
Effectiveness	.58*	.31*	.31*	.19	.08	.51*	.51*	.38*	.55*	.71*	.47*	.71*	.76*	.37*	.25

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit

[2]Number of items in composite

*Correlation significantly different from zero, $p < .05$

TABLE 46

Intercorrelation Between PPDS - Teacher Form Composites (Frequency and Effectiveness Ratings) by Administrative Operations and School Survey Factors and Average Daily Attendance (N=44)[1]

Teacher PPDS Composites	School Survey Factors														% Average Daily Attendance
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Data Collection (13)[2]															
Frequency	.58*	.29	.33*	.25	.10	.43*	.49*	.39*	.56*	.62*	.52*	.55*	.74*	.35*	.38*
Effectiveness	.59*	.32*	.35*	.25	.11	.51*	.55*	.41*	.57*	.71*	.55*	.58*	.75*	.35*	.33*
Planning (7)															
Frequency	.49*	.23	.39*	.20	.11	.39*	.43*	.39*	.43*	.67*	.31*	.62*	.63*	.14	.23
Effectiveness	.57*	.35*	.43*	.26	.20	.56*	.56*	.46*	.51*	.78*	.42*	.66*	.70*	.21	.25
Communicating (74)															
Frequency	.57*	.28	.32*	.27	.15	.45*	.48*	.44*	.55*	.58*	.51*	.56*	.78*	.33*	.44*
Effectiveness	.61*	.37*	.40*	.30*	.19	.54*	.58*	.48*	.58*	.71*	.59*	.62*	.80*	.34*	.40*
Implementing (21)															
Frequency	.62*	.31*	.39*	.36*	.28	.42*	.44*	.54*	.57*	.53*	.50*	.57*	.79*	.35*	.37*
Effectiveness	.67*	.42*	.49*	.39*	.30*	.53*	.58*	.58*	.62*	.71*	.57*	.67*	.82*	.35*	.35*
Evaluating (2)															
Frequency	.39*	.25	.28	.26	.09	.29	.38*	.27	.39*	.50*	.44*	.44*	.66*	.10	.30*
Effectiveness	.44*	.31*	.30*	.22	.09	.50*	.50*	.30*	.52*	.70*	.54*	.49*	.66*	.22	.33*

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit

[2]Number of items in composite

*Correlation significantly different from zero, $p < .05$

are inversely related to their attitudes towards various dimensions of their job as teachers. This may represent a need for principals to reexamine their Staff Personnel performances, with an eye toward developing those competencies having the most beneficial effect on teachers' work attitudes.

Considering the two tables (45 and 46), all other PPDS-Teacher Form composites appear to correlate meaningfully with the School Survey factors. None of the other PPDS scales have less than 50% of their correlations statistically significant. With so many significant correlations between Functional Area and Administrative Operations composites and the various School Survey factors significant for the total sample, specific interpretations are difficult at best. Suffice it to say that the least predictable School Survey factors from the PPDS-Teacher Form composites are Materials and Equipment (4), and Buildings and Facilities (5). Again, these may represent factors over which the principal has little or no control (e.g., budgetary matters), and if so, it seems unlikely they would show significant relationships to assessments of competence in a variety of areas by teachers.

In summary, it appears that the School Survey instrument, for elementary, secondary, and total school groups, is a most viable and predictable measure of variables mediating the school environment... one showing strong relationships to teachers' assessment of principals' competencies in a variety of Functional Areas of Responsibility and Administrative Operations.

Relationships Between PPDS-Teacher Form Ratings and School Climate and Learning Environment

Another set of variables assumed within the G.P.A.S. to mediate between principal's performances and school outcome measures relates

to students' assessment of the general school climate and/or learning environment. The measure of this mediating variable for elementary students was the 45 item, five factor My School Inventory, and for secondary students the 105 item, fifteen factor Learning Environment Inventory was used. Data described in this section of the report summarizes the interrelationships between teacher ratings of principal performances (PPDS-Teacher Form) and elementary and secondary students' perception of various dimensions of the school/learning environment.

Table 47 summarizes the number and percent of PPDS-Teacher Form items (117 total) significantly correlated with the My School factors for 36 elementary schools. The data are interpreted as reflecting a low relationship between these sets of variables for the frequency ratings, since only 8% of the maximum possible number of correlations was significantly different from zero. Moderate relationships are depicted for the effectiveness ratings, with 21% of the PPDS-Teacher Form items significantly correlated with the My School factors.

The My School scales labeled Difficulty and Competetiveness show the largest number of significant correlations with 38% and 48% of the effectiveness ratings respectively, reaching statistical significance. For elementary schools in the sample, it appears that these two My School scales have most in common with the PPDS-Teacher Form items, and are the most predictable student mediating variables. The least predictable My School scales are Cohesiveness and Satisfaction.

The picture of relationships between these variables for secondary students appears even less strong than that for elementary students. Table 48 presents the number and percent of PPDS-Teacher Form items significantly correlated with the Learning Environment Inventory factors for 9 secondary schools. Only 6% and 4% of the respective

TABLE 47
Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings)
Significantly Correlated ($p < .05$) with My School Factors
(Elementary Schools, N=36)

My School Factors	PPDS - Teacher Form Ratings		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
Satisfaction	9	8	8	7
Friction	7	14	6	12
Competitiveness	11	44	9	38
Difficulty	20	56	17	48
Cohesiveness	2	2	2	2
TOTAL	49	124	8	21

[1]Maximum possible number of correlations = 117 (Individual), = 585 (Total)

TABLE 48
Frequency of PPDS - Teacher Form Items
(Frequency and Effectiveness Ratings) Significantly
Correlated ($p < .05$) with Learning Environment Inventory Factors
(Secondary Schools, N=9)

Learning Environment Inventory Factors	PPDS Teacher Form Items		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
1. Intimacy	6	4	5	3
2. Diversity	3	9	3	8
3. Formality	16	6	14	5
4. Speed	13	2	11	2
5. Environment	6	4	5	3
6. Friction	1	1	1	1
7. Goal Direction	11	6	9	5
8. Favoritism	4	1	3	1
9. Difficulty	2	1	2	1
10. Apathy	13	11	11	9
11. Democratic	3	2	3	1
12. Cliqueness	1	1	1	1
13. Satisfaction	5	0	4	0
14. Disorganization	17	11	15	9
15. Competitiveness	10	15	9	13
TOTAL	111	74	6	4

[1] Maximum number of correlations = 117 (Individual), = 1755 (Total)

frequency and effectiveness ratings are significantly correlated with any of the LEI factors. These percentages approximate what would be expected by chance factors alone. In general, none of the LEI scales seems to be any more remarkably predictable from teachers' assessment of principals' functioning than the others. Little global sensitivity exists between PPDS-Teacher Form ratings and students' perception of various dimensions of the school environment as a mediating variable.

Tables 49 and 50 present intercorrelations between PPDS-Teacher Form composites (frequency and effectiveness ratings) for Functional Areas of Responsibility and Administrative Operations respectively, and the My School factors. When the PPDS-Teacher Form items are collapsed into composites and related to elementary students' perception of various dimensions of the school climate, little meaningful data are evident. The Functional Area/My School correlations (Table 49) and the Administrative Operations/My School correlations (Table 50) together yielded a total of only 13 significant correlations out of a possible 110. Between the two tables, approximately 6 correlations would have been expected by chance alone (.05 level), therefore caution must be exercised in interpreting any of the data from these two Tables. In addition, the absolute magnitude of these correlations is rather low to allow for serious considerations of the predictability of the My School instrument as a mediating variable.

It is interesting to note, however, that teachers' assessment of principals' functioning in the area of Pupil Personnel competencies (Table 49) is positively related to students' perception of the school's difficulty. With caution, these coefficients for frequency and effectiveness are interpreted as indicating that the principal competent in carrying out pupil personnel functions exists in schools seen by students

TABLE 49

Intercorrelation Between PPDS - Teacher Form Composites
by Functional Areas of Responsibility (Frequency and Effectiveness Ratings)
and My School Factors
(Elementary Schools, N=36)

	My School Factors				
Teacher - PPDS Composites	Satisfaction	Friction	Competitiveness	Difficulty	Cohesiveness
Curriculum and Instruction (35)[1]					
Frequency	-.26	.14	.25	.25	-.25
Effectiveness	-.20	.16	.29	.31	-.13
Staff Personnel (40)					
Frequency	-.15	.18	.25	.26	-.21
Effectiveness	-.01	-.02	-.04	-.13	-.00
Pupil Personnel (17)					
Frequency	-.14	.27	.29	.41*	-.07
Effectiveness	-.20	.30	.37*	.48*	-.21
School Community Interface (1)					
Frequency	-.16	.12	.08	.20	-.16
Effectiveness	-.13	.28	.25	.31	-.17
Fiscal Management (9)					
Frequency	-.00	.21	.43*	.28	-.08
Effectiveness	-.06	.25	.44*	.32	-.09
System Wide Policies and Operations (15)					
Frequency	-.14	.13	.25	.18	-.22
Effectiveness	-.18	.21	.37*	.33*	-.15

[1]Number of items in composite

*Correlation significantly different from zero, $p < .05$

TABLE 50

Intercorrelation Between PPDS - Teacher Form Composites Administrative Operation (Frequency and Effectiveness) and My School Factors (Elementary Schools, N=36)

PPDS-Teacher Composites	My School Factors				
	Satisfaction	Friction	Competitiveness	Difficulty	Cohesiveness
Data Collection (13)[1]					
Frequency	-.25	.22	.32	.20	-.25
Effectiveness	-.23	.27	.37*	.27	-.17
Planning (7)					
Frequency	-.14	.03	.26	.23	-.09
Effectiveness	-.14	.12	.31	.34*	-.06
Communicating (74)					
Frequency	-.17	.22	.29	.33*	-.25
Effectiveness	-.17	.22	.35*	.38*	-.12
Implementing (21)					
Frequency	-.10	.04	.23	.23	-.11
Effectiveness	-.07	.09	.29	.30	-.03
Evaluating (2)					
Frequency	-.35*	.09	.15	.03	-.27
Effectiveness	-.28	.28	.31	.26	-.16

1 Numbers in parentheses represent number of items in composite. School means used as sampling unit.

* Correlation significantly different from zero, $p < .05$

as generally less difficult.* In addition, though more difficult to interpret, the data in Table 49 show that principals' assessed as less competent by teachers in Fiscal Management performances exist in schools viewed as more Competitive by elementary students.

The only My School factor significantly correlated with both frequency and effectiveness ratings for an Administrative Operations composite (Table 50) was, again, the Difficulty scale, which was positively correlated with the composite of Communicating. If these data are reliable, non-chance effects, it appears that principals assessed by teachers as competent in communicating types of performances exist in schools students perceive as less difficult.

Tables 51 and 52 present the intercorrelations between PPDS-Teacher Form composites (frequency and effectiveness ratings) for Functional Areas of Responsibility and Administrative Operations respectively, and factors of the Learning Environment Inventory administered to secondary students. The LEI factor numbers can be cross-referenced with corresponding numbers in Table 48 (p. 135) to derive scale names.

Only 2% of the 330 correlations in these two tables were found to be significantly different from zero, and these most probably can be attributed to chance effects. However, there remains the possibility, owing to the small secondary school sample used in this study, that certain LEI scales might be predictable from teachers' ratings of principal performances if the sample were increased to approximate

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*My School scale should be interpreted in a direction opposite of Scale name, i.e. Difficulty = Easiness, Satisfaction = Dissatisfaction due to scoring procedure applied.

TABLE 51

Intercorrelation Between PPDS - Teacher Form Composites by Functional Areas of Responsibility (Frequency and Effectiveness Ratings) and Learning Environment Inventory Factors (Secondary Schools, N=9)

Teacher PPDS Composites	Learning Environment Inventory Factors														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Curriculum & Instruction (35)[1]															
Frequency	.39	.50	.63	-.48	.49	-.33	.55	-.29	-.12	.60	-.40	-.26	-.47	.56	.64
Effectiveness	.14	.35	.53	-.29	.25	-.35	.43	-.33	-.10	.42	-.39	-.26	-.28	.49	.55
Staff Personnel (40)															
Frequency	-.12	-.57	-.09	.06	-.02	.17	.00	-.30	-.25	-.19	-.07	-.01	-.09	-.03	-.15
Effectiveness	-.14	-.58	-.08	.06	-.02	.15	.01	-.33	-.26	-.18	-.10	-.04	-.09	-.01	-.14
Pupil Personnel (17)															
Frequency	.34	.31	.79*	-.51	.49	-.13	.59	-.51	-.16	.49	-.48	-.22	-.51	-.57	.67*
Effectiveness	.26	.21	.69*	-.46	.42	-.29	.58	-.51	-.28	.51	-.51	-.33	-.46	.64	.65
School Community Interface															
Frequency	.44	.37	.52	-.63	.47	-.28	.34	-.48	-.04	.30	-.54	-.41	-.42	.30	.14
Effectiveness	.31	.56	.65	-.56	.41	-.41	.46	-.39	.05	.48	-.55	-.39	-.37	.38	.52
Fiscal Management (9)															
Frequency	.13	.48	.36	-.38	.18	-.48	.20	-.31	.15	.25	-.47	-.44	-.14	.19	.20
Effectiveness	-.03	.33	.30	-.26	.05	-.42	.14	-.32	.10	.16	-.42	-.45	-.04	.18	.21
System Wide Policies and Operations (15)															
Frequency	.23	.51	.50	-.42	.30	-.18	.27	-.21	.14	.32	-.32	-.30	-.22	.24	.40
Effectiveness	.13	.42	.43	-.32	.19	-.27	.26	-.23	.06	.30	-.33	-.31	-.16	.29	.39

[1]Number of items in composite

*Correlation significantly different from zero, $p < .05$

TABLE 52

Intercorrelation Between PPDS - Teacher Form Composites by Administrative Operations (Frequency and Effectiveness Ratings) and Learning Environment Inventory Factors (Secondary Schools, N=9)

Teacher PPDS Composites	Learning Environment Inventory Factors														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data Collection (13)[1]															
Frequency	.30	.61	.59	-.39	.34	-.18	.34	-.22	.18	.34	-.32	-.12	-.28	.27	.41
Effectiveness	.16	.43	.51	-.31	.22	-.28	.31	-.31	.06	.29	-.38	-.24	-.21	.32	.38
Planning (7)															
Frequency	.04	.40	.59	-.28	.22	-.37	.47	-.33	-.01	.48	-.42	-.28	-.26	.46	.74*
Effectiveness	-.06	.37	.48	-.15	.10	-.36	.36	-.27	.05	.36	-.34	-.23	-.14	.37	.62
Communicating (74)															
Frequency	.45	.48	.71*	-.58	.56	-.30	.58	-.40	-.13	.59	-.48	-.31	-.54	.56	.62
Effectiveness	.20	.32	.56	-.41	.32	-.37	.45	-.39	-.15	.46	-.46	-.38	-.34	.51	.55
Implementing (21)															
Frequency	.39	.41	.72*	-.63	.55	-.39	.61	-.54	-.16	.59	-.61	-.46	-.56	.57	.64
Effectiveness	.12	.25	.62	-.40	.29	-.38	.49	-.52	-.16	.43	-.55	-.41	-.34	.52	.59
Evaluating (2)															
Frequency	.34	.55	.74*	-.47	.42	-.28	.52	-.39	.04	.45	-.48	-.15	-.41	.45	.55
Effectiveness	.22	.79*	.56	-.19	.24	-.15	.29	-.07	.42	.29	-.19	.11	-.20	.14	.44

[1]Number of items in composite

*Correlation significantly different from zero, $p < .05$

that used for elementary schools. Though some of the correlations in Tables 51 and 52 appear larger than those tabled elsewhere in this report, a correlation here was not statistically significant until it approached a magnitude of r=.67. Another factor possibly contributing to the infrequency of significant correlations between the PPDS-Teacher Form composites and the LEI factors are the PPDS-Teacher Form items themselves. The items on this instrument were the same as those used in elementary schools. However, they may not have been as appropriate, i.e., did not allow for as adequate an assessment of existing variability in attitudes for secondary, as for elementary principal performances.

In summarizing the relationship between PPDS-Teacher Form items and composites and elementary and secondary students' perceptions of various dimensions of the school climate and learning environment, it appears that little, if any, meaningful relationships exist between these measures.

CORRELATIONS BETWEEN PPDS-TEACHER FORM ITEMS AND COMPOSITES AND OUTCOME DATA: ACHIEVEMENT TEST PERFORMANCES AND SCHOOL AVERAGE DAILY ATTENDANCE

As contrasted to correlations between the PPDS-Teacher Form items and composites and school climate measures (student mediating variables), the Teacher-PPDS/School Outcomes correlations are seemingly much more encouraging. The number and frequency of PPDS-Teacher Form items (frequency and effectiveness ratings) significantly correlated with school outcome measures for elementary schools is presented in Table 53. The maximum possible number of correlations for any Iowa Test of Basic Skills subtest was 117. As can be seen in the table, significant effectiveness ratings correlations are far more frequent in number than significant frequency ratings correlations. This trend is consistent

TABLE 53
Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings)
Significantly Correlated ($p \leq .05$) with Student Achievement and Average Daily Attendance
(Elementary Schools, N=35)

Iowa Tests of Basic Skills Subtests	PPDS - Teacher Form Ratings		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
Vocabulary	17	39	15	33
Reading	16	46	14	39
Language	20	56	17	48
Work-Study Skills	21	48	18	41
Math	26	48	22	41
Battery Total	15	34	13	29
%Average Daily Attendance[2]	2	6	2	5

[1]Maximum possible number of correlations = 117
[2]Based on N=36 Elementary Schools

throughout the ITBS subtests. However, no meaningful relationships between PPDS-Teacher Form items and school Average Daily Attendance figures are evident.

It appears from these data that moderate global relationships exist between the teacher input variables (PPDS-Teacher Form items) and the school outcome variables (ITBS scores) for elementary schools in this study. Apparently teachers' assessments of a variety of elementary principals' performances are related to student achievement within the school. It might be recalled that original hypotheses concerning these relationships within the G.P.A.S. design assumed greater relaionships between Input and Mediating variables than between Input and Outcome variables. When contrasting these data to those described above for elementary schools, it appears that this unexpected finding emerges.

Comparing the frequency and effectiveness correlations, it seems apparent that the effectiveness with which a principal carries out a variety of performances (from the teachers' viewpoint) has far more in common with student achievement at the elementary level, than the mere frequency with which he engages in selected activities.

Data summarizing the number and frequency of significant correlations between PPDS-Teacher Form items and student achievement (Tests of Academic Progress) and Average Daily Attendance for secondary schools are presented in Table 54. No meaningful patterns of correlations for the subtests of the TAP were found. The 41 significant correlations with Average Daily Attendance, however, might be suggestive of a low, predictive relationship between the teacher input variables and this school outcome measure for secondary students. This finding is interesting when contrasting it with the ADA/PPDS-

TABLE 54
Frequency of PPDS - Teacher Form Items (Frequency and Effectiveness Ratings) Significantly Correlated ($p < .05$) with Student Achievement and Average Daily Attendance (Secondary Schools, N=10)

	PPDS Teacher Form Items		% of Maximum Possible[1]	
Tests of Academic Progress	Frequency	Effectiveness	Frequency	Effectiveness
Reading	5	1	4	1
Math	6	0	5	0
Average Daily Attendance	15	26	13	22

[1]Maximum possible number of correlations = 117

Teacher Form data for elementary students. It may be that items comprising this first form of the Teacher PPDS differentially relate to school outcome measures for elementary and secondary schools.

When the elementary and secondary schools are combined, and the frequency and effectiveness ratings of the PPDS-Teacher Form items are viewed in terms of the number of significant correlations with ADA (refer back to Table 40), relationships between these measures again find support. Composite intercorrelations between these two variables for the combined groups are presented in Table 55.

It seems that many of the activities engaged in by principals, at least as viewed by teachers, are related to the "holding power" of the school. The finding that approximately one-third of the PPDS-Teacher Form/ADA correlations for the total group examined (Table 40), and that 15 out of 22 possible composite correlations (Table 55) were significant, supports the presence of a general administrative practice factor which impacts on the whole school (teachers and students in particular) in such a way as to positively influence average daily attendance. There are, of course, legal constraints on the principal and school system to maintain maximum daily attendance, and the data reported here do suggest that principals in the present sample are successfully implementing relevant attendance programs. However, the correlations are suggestive of a relationship between variation in principal's competencies as perceived by teachers, and school attendance figures. The simple case may be that more competent principals are found in schools with the highest average daily attendance.

It was noted that when PPDS-Teacher Form items were treated individually, moderately strong relationships with achievement test scores were observed. When these items are combined into Functional

TABLE 55
Intercorrelation Between PPDS - Teacher Form Composites
(Frequency and Effectiveness Ratings) and
% Average Daily Attendance (N=44)[1]

Teacher PPDS Composites	% Average Daily Attendance	
Administrative Operations	Frequency	Effectiveness
Data Collection (13)[2]	.38*	.33*
Planning (7)	.23	.25
Communicating (74)	.44*	.40*
Implementing (21)	.37*	.35*
Evaluating (2)	.30*	.33*
Functional Areas of Responsibility		
Curriculum and Instruction (35)	.40*	.37*
Staff Personnel (40)	-.46*	-.30*
Pupil Personnel (17)	.44*	.43*
School Community Interface (1)	.16	.32*
Fiscal Management (9)	.17	.17
System Wide Policies and Operations (15)	.20	.25

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit
[2]Number of items in composite
*Correlation significantly different from zero, $p < .05$

Area and Administrative Operations composites, relationships become more specific, however, seemingly less strong. Tables 56 and 57 present the intercorrelations between PPDS-Teacher Form composites (frequency and effectiveness ratings) for Functional Areas of Responsibility and Administrative Operations respectively, and elementary school achievement and average daily attendance data. As can be seen in the tables, only 12 Functional Area composites and 7 Administrative Operations composites correlated significantly with any of the ITBS scores. For these tables, approximately 3 to 4 correlations would be expected to reach significance by chance factors alone. None of the frequency ratings correlations reached statistical significance, an expected finding given the frequency of significant correlations data in Table 53 for the elementary sample. However, there appears to be some interesting relationships for effectiveness ratings of the PPDS-Teacher Form in Table 56.

Ratings for the Pupil Personnel composite effectiveness scale significantly correlated with all subtests of the ITBS as well as the ITBS battery total. When integrated with the finding that teachers' assessment of principals functioning in Pupil Personnel performances is positively related to students' perception of the school's Difficulty (Table 49), these data seem quite logical. Apparently (from the teachers point of view) principals competent in carrying out Pupil Personnel competencies are generally associated with school climates seen as less difficult by students, which is in turn associated with higher school achievement. In addition, the data in Table 57 point to the general relationship between the effectiveness with which principals demonstrate Communications competencies and elementary student achievement. For validation purposes, the magnitude of the significant correlations in Tables 56 and 57 is considered moderate.

TABLE 56

Intercorrelation Between PPDS - Teacher Form Composites by Functional Areas of Responsibility (Frequency and Effectiveness Ratings) and Student Achievement and Average Daily Attendance (Elementary Schools, N=35)

	Iowa Tests of Basic Skills Subtests						
Teacher PPDS Composites	Vocabulary	Reading	Language	Work Study	Math	ITBS Total	% Average Daily Attendance
Curriculum and Instruction (35)[1]							
Frequency	.11	.10	.12	.10	.13	.06	.10
Effectiveness	.27	.27	.29	.25	.28	.22	.15
Staff Personnel (40)							
Frequency	.19	.17	.21	.21	.26	.16	.11
Effectiveness	-.23	-.21	-.20	-.23	-.25	-.24	-.13
Pupil Personnel (17)							
Frequency	.25	.24	.28	.31	.35*	.22	.14
Effectiveness	.35*	.36*	.40*	.40*	.42*	.33*	.23
School Community Interface (1)							
Frequency	.12	.09	.15	.18	.24	.13	-.03
Effectiveness	.30	.29	.37*	.35*	.37*	.29	.09
Fiscal Management (9)							
Frequency	.27	.26	.27	.28	.32	.21	.13
Effectiveness	.32	.32	.35*	.32	.36*	.26	.17
System Wide Policies and Operations (15)							
Frequency	.05	.02	.04	.05	.08	.00	.02
Effectiveness	.25	.24	.27	.25	.28	.22	.15

[1]Number of items in composite

*Correlation significantly different from zero, $p < .05$

TABLE 57
Intercorrelation Between PPDS - Teacher Form Composites
by Administrative Operations (Frequency and Effectiveness Ratings)
and Student Achievement and Average Daily Attendance
(Elementary Schools, N=35)

Teacher PPDS Composites	Iowa Tests of Basic Skills Subtests						
	Vocabulary	Reading	Language	Work Study	Math	ITBS Total	% Average Daily Attendance
Data Collecting (13)[1]							
Frequency	.13	.13	.17	.15	.19	.11	.07
Effectiveness	.27	.28	.33*	.27	.32	.24	.10
Planning (7)							
Frequency	.11	.12	.13	.11	.11	.08	.06
Effectiveness	.27	.29	.31	.28	.28	.25	.17
Communications (74)							
Frequency	.19	.17	.20	.21	.25	.14	.15
Effectiveness	.32	.32	.35*	.34*	.37*	.28	.18
Implementing (21)							
Frequency	.15	.12	.14	.16	.10	.12	.04
Effectiveness	.29	.28	.31	.30	.33*	.26	.10
Evaluation (2)							
Frequency	-.05	-.06	.00	-.06	.00	-.08	-.02
Effectiveness	.27	.28	.35*	.26	.34*	.24	.12

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

As might be expected from the frequency of significant correlations data in Table 53, none of the PPDS-Teacher Form composite scores were significantly correlated with the outcome variable of average daily attendance for elementary schools. This may in part be attributed to the lack of variability between elementary schools in this sample for this measure. All elementary schools evidenced rather high average daily attendance.

For secondary schools, data summarizing the intercorrelations between PPDS-Teacher Form composites (frequency and effectiveness ratings) for Functional Areas of Responsibility and Administrative Operations respectively, and school outcome measures is presented in Tables 58 and 59. When the Teacher-PPDS items were formed into composites and correlated with student scores on the Tests of Academic Progress and ADA, only two were found to reach statistical significance. The paucity of significant correlations here can in part be attributed to the small sample size on which the correlations were computed. The 41 significant item correlations with ADA (see Table 54), when combined into appropriate composites, did not reach statistical significance. The general level of the correlations (size) was, however, moderately high for validation purposes.

An increase in the secondary school sample could possibly lead to a greater frequency of significant correlations between PPDS-Teacher Form composites and ADA for secondary schools, making relationships and interpretation between these variables more definitive. The data in Table 55 for the combined groups lend support to this sample size interpretation.

In summary, moderately strong relationships between the PPDS-Teacher Form items and composites and student achievement for

TABLE 58

Intercorrelations Between PPDS - Teacher Form Composites by Functional Area of Responsibility (Frequency and Effectiveness) and Reading and Math Sub-Test Scores from the Test of Academic Progress and Average Daily Attendance (Secondary Schools, N=9)

PPDS - Teacher Form Composites	Tests of Academic Progress		School Average Daily Attendance
	Reading	Math	
Curriculum and Instruction (35)[1]			
Frequency	-.25	-.29	.68*
Effectiveness	-.21	-.24	.53
Staff Personnel (40)			
Frequency	-.22	-.21	-.63
Effectiveness	-.24	-.23	-.64
Pupil Personnel (17)			
Frequency	-.36	-.40	.48
Effectiveness	-.43	-.46	.47
School Community Interface (1)			
Frequency	-.06	-.08	.45
Effectiveness	-.08	-.12	.54
Fiscal Management (9)			
Frequency	.11	.09	.45
Effectiveness	.06	.04	.33
System Wide Policies and Operations (15)			
Frequency	.00	-.05	.50
Effectiveness	-.05	-.08	.49

[1] Number of items in composite

*Correlation significantly different from zero, $p < .05$

TABLE 59
Intercorrelations Between PPDS - Teacher Form Composites by Administrative Operation (Frequency and Effectiveness) and Reading and Math Sub-Test Scores from the Tests of Academic Progress and Average Daily Attendance (Secondary Schools, N=9)

PPDS - Teacher Composites	Tests of Academic Progress		School Average Daily Attendance
	Reading	Math	
Data Collection (13)[1]			
Frequency	.05	.02	.64
Effectiveness	-.03	-.06	.53
Planning (7)			
Frequency	-.20	-.26	.41
Effectiveness	-.11	-.16	.40
Communicating (74)			
Frequency	-.27	-.31	.65
Effectiveness	-.26	-.30	.50
Implementing (21)			
Frequency	-.31	-.35	.51
Effectiveness	-.30	-.34	.39
Evaluating (2)			
Frequency	-.11	-.14	.64
Effectiveness	.27	.23	.68*

1 Numbers in parenthesis represent number of items in scale composite. School means used as sampling unit

* Correlations significantly different from zero, $p < .05$

elementary schools are evident in data reported here. The composite intercorrelations for secondary schools were not as encouraging for either student achievement or average daily attendance, however, the average daily attendance correlations may have failed to approach statistical significance owing to the small (N=9) sample size. As hypothesized within the G.P.A.S. design, input/mediating variables were expected to relate more strongly than input/outcome variables. Data described here seem to generally support these expectations, but in addition, provide some support for the predictability of student outcome measures from teachers' assessments of principals competencies in a wide variety of professional areas.

CORRELATIONS BETWEEN PPDS-EXTERNAL OBSERVER FORM
PRODUCT SCORES AND MEDIATING VARIABLES

It will be recalled that the School Survey, My School, and Learning Environment Inventory instruments were conceived of as general measures of teachers' occupational satisfaction and/or job-related attitudes, and elementary and secondary students' perception of school climate, respectively. These variables were classified as "mediating" variables within the G.P.A.S., serving as the medium through which the principal's influence was conceived to impact on student outcome variables (student achievement and average daily attendance).

The External Observer (EO) Instrument, on the other hand, was classified as an "input" variable measure, one providing specific information about a variety of principal competencies and performance indicators. Each of the 155 items on the EO instrument yielded, if applicable for a given school-principal situation, a product score ranging from one to four, with the higher score indicating that more concrete evidence for a particular performance item was available. The product scores were derived in an interview situation and indicated the extent to which a given principal could provide for an external observer/interviewer concrete and observable evidence that selected performances or activities had been accomplished in his or her school. (See pp. 30-33 for a more complete description of this instrument.)

The 155 items of the EO instrument were cross-classified according to the R.O.M.E. Competence Classification Model in the following manner:

ADMINISTRATIVE OPERATIONS	Number of Items
Data Collection	19
Planning	37
Communicating	2
Decision Making	42
Implementing	24
Evaluating	31
TOTAL	155

FUNCTIONAL AREAS OF RESPONSIBILITY	Number of Items
Curriculum and Instruction	35
Staff Personnel	12
Pupil Personnel	29
Support Management	3
School Community Interface	3
Fiscal Management	44
System Wide Policies and Operations	29
TOTAL	155

Within the G.P.A.S. design, it was hypothesized, as with other input variables, that the EO instrument product scores would show higher relationships in terms of the frequency and magnitude of composite correlations with mediating than with outcome variables. Relationships were examined both on an individual item basis as well as on the basis of composite scores.

Relationships Between PPDS-External Observer Form Product Scores and School Survey Factors

Summaries of the frequency and percent of significant correlations between the 155 item EO instrument product scores and the School Survey factors are presented in Tables 60, 61, and 62. These summaries are for the samples of elementary, secondary, and combined school groups respectively. The data are not outstanding in terms of an overall relationship between these two variables for any group. An average of only 7.8% of the correlations were significant for elementary schools; 2.5% for the secondary schools; and 8.8% for the combined (N=44) schools, for the School Survey scales. These averages are not considered large enough for interpretative statements to be made, though for elementary and combined groups they differed from what might have been expected by chance factors alone.

When viewing the combined group data (Table 62), several of the School Survey scales seem more predictable from the EO instrument than others. Factors 1 (Administrative Practices), 2 (Professional Work Load), 5 (Buildings and Facilities), 6 (Educational Effectiveness), 7 (Evaluation of Students), and 14 (Financial Incentives) all exceed the average proportion of significant

TABLE 60
Frequency of PPDS - External Observer Form Items
Significantly Correlated ($p < .05$) with School Survey Factors
(Elementary Schools, N=36)

School Survey Factors	PPDS - External Observer Form Items: Frequency	PPDS - External Observer Form Items: % of Maximum Possible[2]
1. Administrative Practices (9)[1]	13	8.4
2. Professional Work Load (9)	9	5.8
3. Non-Professional Work Load (6)	12	7.7
4. Materials and Equipment (8)	11	7.1
5. Buildings and Facilities (7)	26	16.8
6. Educational Effectiveness (10)	17	11.0
7. Evaluation of Students (10)	18	11.6
8. Special Services (8)	7	4.5
9. School Community Relations (7)	7	4.5
10. Supervisory Relations (10)	8	5.2
11. Colleague Relations (7)	6	3.9
12. Voice in Educational Program (8)	11	7.1
13. Performance and Development (10)	8	5.2
14. Financial Incentives (9)	15	9.7
TOTAL	168	7.8

[1]Number of items in composite
[2]Maximum possible number of correlations = 155 (Individual), 2170 (Total)

TABLE 61
Frequency of PPDS - External Observer Form Items
Significantly Correlated ($p < .05$) with School Survey Factors
(Secondary Schools, N=10)

School Survey Factors	PPDS - External Observer Form Items Frequency	% of Maximum Possible[2]
1. Administrative Practices (9)[1]	4	2.3
2. Professional Work Load (9)	4	2.3
3. Non-Professional Work Load (6)	5	3.2
4. Materials and Equipment (8)	5	3.2
5. Buildings and Facilities	5	3.2
6. Educational Effectiveness (10)	3	1.9
7. Evaluation of Students (10)	2	1.3
8. Special Services (8)	7	4.5
9. School Community Relations (7)	2	1.3
10. Supervisory Relations (10)	2	1.3
11. Colleague Relations (7)	5	3.2
12. Voice in Education Program (8)	3	1.9
13. Performance and Development (10)	2	1.3
14. Financial Incentives (9)	6	3.9
TOTAL	55	2.5

[1]Number of items on scale
[2]Maximum possible number of correlations = 155 (Individual), 2170 (Total)

TABLE 62
Frequency of PPDS - External Observer Form Items
Significantly Correlated ($p \leq .05$) with School Survey Factors and
Average Daily Attendance (N=44)[1]

School Survey Factor	PPDS - External Observer Form Items Frequency	% of Maximum Possible[2]
1. Administrative Practices (9)[4]	16	10.3
2. Professional Work Load (9)	15	9.7
3. Non Professional Work Load (6)	6	3.9
4. Materials and Equipment (8)	11	7.1
5. Buildings and Facilities (7)	29	18.7
6. Educational Effectiveness (10)	16	10.3
7. Evaluation of Students (10)	22	14.2
8. Special Services (8)	10	6.5
9. School Community Relations (7)	8	5.1
10. Supervisory Relations (10)	8	5.1
11. Colleague Relations (7)	12	7.7
12. Voice in Educational Program (8)	12	7.7
13. Performance and Development (10)	13	8.4
14. Financial Incentives (9)	14	9.0
Total	192	8.8
% Average Daily Attendance[3]	19	12.3

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit
[2]Maximum possible number of correlations = 155 (Individual), 2170 (Total)
[3]Based on 36 elementary and 9 secondary schools using school means as the sampling unit
[4]Number of items on scale

correlations for any one School Survey factor. These data seemingly indicate that there does not apparently exist a gross over-all or "global" product factor that relates to teacher job satisfaction. However, owing to the nature of the items comprising the EO instrument (see Instrument Appendix Volume), the largest relationships between factors 1, 5, 6, and 7 of the School Survey and EO product scores seems reasonable. Many of the statements on the EO instrument described performances logically related to these School Survey scale labels.

The meaningfulness of significant correlations between the PPDS-EO Form and the School Survey factors becomes more evident when examining composite and factor intercorrelations. These relationships are summarized for elementary, secondary, and total school groups in Tables 63, 64, and 65 respectively.

For elementary schools, 25 of the possible 182 intercorrelations between PPDS-EO Form composites and School Survey factors were statistically different from zero. Chance effects would predict approximately 9 significant correlations. While the absolute number of significant correlations is not extremely large, some patterning of relationships between the two instruments seems evident. The PPDS-EO Form composites of Staff Personnel and Fiscal Management correlated positively with eight and seven of the School Survey scales respectively. While the coefficients are only moderately large for validation purposes, they do point to the predictability of certain School Survey factors as mediating variables from the PPDS-EO composites of competencies and performance indicators. It is also interesting to note the overlap in significant correlations between the Staff Personnel and Fiscal Management composites, with 6 of the significant correlations corresponding to the same School Survey factors.

The intercorrelations between PPDS-EO Form composites and the School Survey factors for secondary students yielded only two significant correlations (Table 64). These effects are most likely due to chance factors. It is interesting to note that correlations approaching significance (above .60) tended

TABLE 63
Intercorrelation Between PPDS - External Observer Form Composites
(Product Scores) and School Survey Factors
(Elementary Schools, N=36)

PPDS - External Observer Form Composites	School Survey Factors													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (19)[1]	.17	-.03	.35*	-.00	.20	.17	.20	-.01	.13	.09	.14	.16	.30	.29
Planning (37)	.28	-.04	-.28	-.03	.16	.28	.26	.22	.20	.21	.24	.37*	.24	.33*
Communicating (2)	.10	-.03	.14	-.10	-.13	-.09	-.02	.15	.06	-.09	.19	.13	.14	.19
Decision Making (42)	.27	.03	-.19	.10	.33*	.26	.29	.16	.16	.21	.21	.38*	.32	.24
Implementing (24)	.25	.13	-.04	.13	.30	.32*	.31	.19	.09	.17	.34*	.26	.24	.24
Evaluating (31)	.18	-.07	-.18	.02	.25	.14	.17	.10	.09	.20	.07	.29	.26	.17
Functional Areas of Responsibility														
Curriculum and Instruction (35)	.14	-.04	-.24	.01	.31	.13	.11	.06	.09	.11	.13	.21	.15	.21
Staff Personnel (12)	.49*	.15	.10	.31	.39*	.34*	.43*	.39*	.28	.37*	.21	.56*	.48*	.28
Pupil Personnel (29)	.11	-.17	-.23	-.01	.13	.07	.07	.05	-.04	.12	-.01	.25	.19	.16
Support Management (3)	.14	.11	.20	-.14	-.05	-.02	.05	.07	.12	.01	.23	.20	.13	.23
School Community Interface (3)	.20	-.04	-.32	-.12	.02	.10	.19	.12	.24	-.11	.15	.12	.06	.35*
Fiscal Management (44)	.33*	.20	.01	.20	.27	.38*	.44*	.38*	.22	.31	.35*	.40*	.35*	.22
System Wide Policies and Operations (29)	.22	-.10	-.42*	-.15	.15	.27	.23	-.06	.17	.12	.21	.28	.29	.35*

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 64

Intercorrelation Between PPDS - External Observer Form Composites (Product Scores) and School Survey Factors (Secondary Schools, N=10)

PPDS - External Observer Composites / Administrative Operation	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (19)[1]	-.45	-.27	-.38	-.45	.12	.08	.06	.45	-.49	-.30	-.51	-.39	-.32	.25
Planning (37)	.04	-.24	-.26	.04	.31	.37.	.32	.41	.06	-.02	-.18	.02	-.11	.69*
Communicating (2)[2]	---[2]	---	---	---	---	---	---	---	---	---	---	----	---	---
Decision Making (42)	.17	-.15	-.08	-.35	.19	-.12	-.13	-.19	.08	.05	.10	.17	-.33	.16
Implementing (24)	-.16	-.28	-.30	-.18	.02	-.37	-.39	-.34	-.10	-.14	-.31	.06	-.32	-.11
Evaluating (31)	.01	.18	.23	-.21	-.40	-.33	-.06	-.19	-.10	.34	.14	.39	-.17	-.34
Functional Areas of Responsibility														
Curriculum and Instruction (35)	.27	.05	.04	.08	.41	-.06	.04	.29	-.04	.09	-.04	.23	-.11	.27
Staff Personnel (12)	-.08	-.38	-.39	-.03	.39	.29	-.01	.15	.02	-.28	-.22	-.32	-.28	.49
Pupil Personnel (29)	-.11	-.30	-.25	-.18	.19	-.09	-.26	-.18	-.15	-.22	-.02	-.20	-.45	.10
Support Management (3)	.56	.66	.68	.17	-.05	.72	.79*	.69	.38	.62	.60	.34	.73	.35
School Community Interface (3)	.09	-.02	.00	-.01	.19	.29	.14	.25	.02	.04	.07	-.10	-.15	.29
Fiscal Management (44)	-.15	-.21	-.20	-.18	-.20	-.33	-.09	-.22	-.08	.05	-.24	.26	-.21	-.04
System Wide Policies and Operations (29)	-.19	-.28	-.29	-.16	-.01	.05	-.14	-.11	-.05	-.11	-.19	-.12	-.31	.12

[1]Number of items in composite

[2]Correlation not computed owing to lack of E.O. composite variability and/or too few number of cases

*Correlation significantly different from zero, $p < .05$

TABLE 65
Intercorrelation Between PPDS - External Observer Form Composites
(Product Scores) and School Survey Factors and
Average Daily Attendance (N=44)[1]

E.O. - PPDS Composites	School Survey Factors														% Average Daily Attendance[3]
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Data Collection (19)[2]	.13	-.10	-.24	.13	.24	.17	.20	.10	.07	.00	.13	.03	.25	.29*	.09
Planning (37)	.23	-.04	.22	.02	.15	.28	.24	.22	.15	.16	.19	.29*	.20	.33*	.09
Communicating (2)	.14	.02	.17	-.04	-.05	-.06	.01	.19	.09	-.08	.23	.10	.17	.20	.12
Decision Making (42)	.17	.06	-.07	.13	.35*	.23	.25	.18	.15	.16	.25	.29*	.28	.21	.23
Implementing (24)	.17	.08	-.02	.15	.28	.15	.13	.14	.05	.04	.25	.13	.14	.12	.21
Evaluating (31)	.23	.03	.02	.12	.31*	.15	.19	.19	.11	.17	.20	.21	.30*	.15	.29*
Functional Areas of Responsibility															
Curriculum and Instruction (35)	.17	.04	-.08	.12	.36*	.13	.12	.14	.08	.08	.19	.15	.18	.20	.15
Staff Personnel (12)	.39*	.09	.01	.28	.34*	.32*	.34*	.34*	.21	.23	.14	.38*	.34*	.28	.09
Pupil Personnel (29)	.08	-.18	-.21	-.03	.11	.05	.03	.02	-.07	.08	-.02	.20	.11	.14	.08
Support Management (3)	.21	.22	.33*	-.04	-.01	.11	.19	.18	.17	.12	.31*	.22	.26	.27	.12
School Community Interface (3)	.13	-.05	-.25	-.11	-.02	.10	.14	.08	.16	-.09	.08	.07	-.02	.30*	-.06
Fiscal Management (44)	.30*	.20	-.08	.24	.29*	.29*	.37*	.37*	.19	.22	.34*	.30*	.32*	.18	.24
System Wide Policies and Operations (29)	.18	-.07	-.28	-.07	.17	.25	.18	-.00	.14	.06	.21	.16	.23	.30*	.23

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit
[2]Number of items in composite
[3]Based on 36 elementary and 9 secondary schools using school means as the sampling unit
*Correlation significantly different from zero, $p < .05$

to be distributed across several School Survey factors for the Support Management composite.

Table 65 presents the EO composites/School Survey intercorrelations for elementary and secondary schools combined. Twenty seven of the possible 132 correlations are significantly different from zero, and like the data for the elementary schools, the most consistent loadings are for the Staff Personnel and Fiscal Management composites. It appears that several of the School Survey factors are moderately predictable from the PPDS-EO product scores for these composites. All of the significant correlations for these composites are positive in direction, indicating that the greater the production of concrete, observable evidence for Staff Personnel and Fiscal Management performances by principals in the total sample, the more positive teacher attitudes toward certain dimensions of their work setting and the school Apparently principals who actively engage in carrying out performances in relationship to staff members in the school (faculty), and who, at the same time have sound Fiscal Management programs, are found in schools having teachers with more positive attitudes towards factors 1 (Administrative Practices), 5 (Buildings and Facilities), 6 (Educational Effectiveness), 7 (Evaluation of Students), 8 (Special Services), 12 (Voice in Educational Program), and 13 (Performance and Development).

Relationships Between PPDS-External Observer Form Product Scores and School Climate and Learning Environment

Another set of variables within the G.P.A.S. assumed to mediate between principal performances and school outcomes, are assessments of the general school climate and learning environment by students. For elementary students, the measure of this mediating variable was the 45-item, five factor My School (MS) inventory. For secondary students, the 105-item, 15 factor Learning Environment Inventory (LEI) was used.

The data of Tables 66 and 67 summarize the number and percent of significant correlations between the PPDS-EO form items and the MS and LEI instruments. The results are generally negligible, with an average of only 5.3% of the correlations significant for the elementary schools, and 4% significant for secondary schools. The My School factors of Satisfaction and Difficulty appear to be the most sensitive to the variables measured by the EO Form, when comparing their percentages of significant correlations to the average for all My School scales. The LEI factors of Formality, Friction, and Democratic appear to be the most sensitive for secondary school students.

Intercorrelations between PPDS-EO composites and the MS and LEI factors for elementary and secondary schools respectively, are presented in Tables 68 and 69. For elementary schools, 7 of a possible 65 intercorrelations between PPDS-EO composites and MS factors were significantly different from zero. Given the rather low total percentage of significant item correlations between the PPDS-EO and MS instruments (Table 66), this finding is not surprising. Approximately 3 significant correlations would have been expected by chance alone.

Two PPDS-EO composites, Staff Personnel and Fiscal Management, correlated significantly with two of the five MS factors. While the coefficients are rather moderate in size for validation purposes, they do indicate moderate predictability of these MS scales from the PPDS-EO instrument. Apparently a principal's competency in Staff Personnel-related performances is associated with the MS scales of Friction and Cohesiveness. The data seem to indicate that increased Staff Personnel competence, as measured by the availability of performance products (evidences) is associated with greater Friction and less Cohesiveness in the elementary sample. In addition, increased Fiscal Management competence as measured by the PPDS-EO product scales is associated with students' perception of the school climate as less Difficult and less Cohesive. (It might be recalled here that coefficients for the MS scales should be interpreted in a direction opposite that of the scale label owing to the scoring procedure applied.)

TABLE 66
Frequency of PPDS - External Observer Form Items
Significantly Correlated ($p < .05$)[1] with
My School Inventory Factors
(Elementary Schools, N=35)

My School Inventory Factors	Frequency	% of Maximum Possible[2]
1. Satisfaction	13	8.4
2. Friction	4	2.3
3. Competitiveness	1	0.6
4. Difficulty	14	9.0
5. Cohesiveness	9	5.8
TOTAL	41	5.3

[1] Based on 3350 students using school means as the sampling unit
[2] Maximum possible number of correlations = 155 (Individual), 775 (Total)

TABLE 67
Frequency of PPDS - External Observer Form Items
Significantly Correlated ($p < .05$) with
Learning Environment Inventory Factors
(Secondary Schools, N=10)[1]

Learning Environment Inventory Factors	Frequency	% of Maximum Possible[2]
1. Intimacy	2	1.3
2. Diversity	2	1.3
3. Formality	14	9.0
4. Speed	5	3.2
5. Environment	4	2.6
6. Friction	12	7.7
7. Goal Direction	9	5.8
8. Favoritism	7	4.5
9. Difficulty	5	3.2
10. Apathy	7	4.5
11. Democratic	11	7.1
12. Cliqueness	4	2.6
13. Satisfaction	5	3.2
14. Disorganization	2	1.3
15. Competitiveness	4	2.6
TOTAL	93	4.0

[1] Based on 3613 students using school means as the sampling unit.
[2] Maximum possible number of correlations = 155 (Individual), 2325 (Total)

TABLE 68

Intercorrelation Between PPDS - External Observer Form Composites (Product Scores) and My School Inventory Factors (Elementary Schools, N=36)

EO - PPDS Composites	My School Factors				
Administrative Operations	Satisfaction	Friction	Competitiveness	Difficulty	Cohesiveness
Data Collection (19)[1]	.06	-.08	-.04	.06	.18
Planning (37)	.26	-.17	.06	.27	.29
Communicating (2)	.05	-.04	-.00	.04	.07
Decision Making (42)	.11	-.14	-.02	.28	.13
Implementing (24)	.06	-.15	-.21	.39*	.23
Evaluating	.12	-.16	.05	.17	.15
Functional Areas of Responsibility					
Curriculum & Instruction (35)	.13	-.19	-.00	.05	.12
Staff Personnel (12)	.27	-.37*	-.18	.29	.33*
Pupil Personnel (3)	.07	-.22	.01	.15	.04
Support Management (3)	-.12	.20	.34*	.09	.06
School Community Interface (3)	.35*	-.01	.06	-.04	.26
Fiscal Management (44)	.16	-.10	.01	.44*	.35*
System Wide Policies and Operations (29)	.11	.00	-.04	.25	.13

[1]Number of items in composite

*Correlation significantly different from zero, $p < .05$

TABLE 69

Intercorrelation Between PPDS - External Observer Form Composites (Product Scores) and Learning Environment Inventory Factors (Secondary Schools, N=9)

E.O. PPDS Composites	Learning Environment Inventory Factors														
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data Collection (19)[1]	-.26	-.21	-.12	.20	-.19	-.39	-.20	-.28	-.23	-.23	-.05	.21	.09	-.05	-.47
Planning (37)	-.60	-.23	-.23	.44	-.55	-.08	-.50	-.15	.16	-.60	.10	.24	.47	-.38	-.51
Communicating (2)[2]	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Decision Making (42)	-.40	-.13	-.28	.44	-.38	.06	-.45	.25	.04	-.33	.48	.41	.39	-.27	-.25
Implementing (24)	-.06	-.11	.21	-.11	.04	-.16	.04	-.22	-.25	.06	-.06	.12	-.06	.10	.07
Evaluating (31)	-.12	-.11	.03	.19	-.17	.05	.01	.26	-.20	.06	.26	.40	.18	.11	.18
Functional Areas of Responsibility															
Curriculum & Instruction (35)	-.52	-.55	-.31	.40	-.55	.39	-.52	.12	.02	-.59	.36	.14	.56	-.33	-.35
Staff Personnel (12)	-.37	-.08	-.23	.44	-.34	.08	-.52	-.01	.26	-.56	.32	.41	.30	-.43	-.54
Pupil Personnel (29)	-.27	-.08	-.43	.47	-.33	.16	-.57	.37	.14	-.44	.63*	.50	.37	-.41	-.49
Support Management (3)	-.13	.26	-.10	.17	-.12	-.29	-.04	-.13	.11	-.04	-.14	-.11	.05	.07	-.17
School Community Interface (3)	-.38	-.17	-.37	.68*	-.50	.52	-.63*	.37	.40	-.72*	.66*	.64*	.52	-.53	-.52
Fiscal Management (44)	.15	-.00	.18	-.12	.03	-.65*	.17	-.36	-.41	.26	-.30	-.04	-.19	.28	.09
System Wide Policies and Operations (29)	-.21	-.08	-.01	.32	-.26	.39	-.36	.15	.26	-.47	.40	.59	.29	-.36	-.27

[1]Number of items in composite

[2]Communicating composite correlations could not be computed owing to small number of items and lack of variability

*Correlation significantly different from zero, $p < .05$

Among the Administrative Operations composites, it is interesting to note that the Implementing composite is significantly correlated with the MS Difficulty scale. Apparently a principal's having on hand observable evidence indicating the actual implementing ("doing") of school programs is associated with schools where students perceive the general climate as less Difficult.

Table 69 presents the intercorrelation between PPDS-EO composite product scores and factors of the LEI for secondary students. The total number of significant correlations in the table is less than what might be expected by chance alone. However, it is interesting to not that five LEI scales, number 4 (Speed), 7 (Goal Direction), 10 (Apathy), 11 (Democratic), and 12 (Cliqueness) are significantly correlated with the School Community Interface composite. With caution, these correlations might be interpreted as indicating that principals' increased competence in carrying out performances related to School/Community relations is associated with students perception of the learning environment as more speeded, less goal directed, less apathetic, more democratic, and having greater cliqueness among students. Given the small sample size on which these data were computed (N=9), and the small number of items in the School/Community composite, the magnitude of these correlations is probably inflated.

In summary, when the PPDS-EO items are classified into logical, subjectively determined content composites, a small number of moderate relationships between the composites and students' assessment of the school climate and learning environment exist. With refinement of PPDS-EO items and composites, and an increase in sample size for secondary schools, it appears that students assessment of certain dimensions of the learning environment has potential as a mediating measure predictable from a small number of PPDS-EO scales.

CORRELATIONS BETWEEN PPDS-EXTERNAL OBSERVER FORM PRODUCT SCORES AND OUTCOME DATA: ACHIEVEMENT TEST PERFORMANCES AND SCHOOL AVERAGE DAILY ATTENDANCE

It was expected that PPDS-EO Form product ratings, in addition to showing stable relationships with mediating variables (teacher attitude and school climate factors) would also show meaningful relationships with outcome variables, such as student performance on standardized achievement tests and school average daily attendance (ADA) percentages. Because they are thought to represent the medium through which principal performances possibly affect outcome variables, mediating variable/PPDS-EO relationships were hypothesized to be larger in terms of magnitude of significant correlations and more frequent than PPDS-EO/outcome variable relationships.

Table 70 contains a summary of the number and percent of significant correlations between PPDS-EO items and student achievement and average daily attendance for both elementary and secondary students. The data seemingly indicate low total relationships between the PPDS-EO items and school outcome variables. The data for secondary students are extremely low, and are interpreted as attributable to chance factors alone.

For elementary schools, the ITBS Language subtest shows the largest number and percent of item correlations with the EO instrument, and shows the most promise as an outcome variable when compared to other subtests figures. In line with predicted relationships between these variables, PPDS-EO items do not appear to have strong relationships with school outcome variables delineated within the G.P.A.S. design. One of the limitations for secondary schools of course, is the rather small sample size on which the correlations were computed. Like certain scales of the School Survey, MS and LEI instruments, it was hoped that subtests of the ITBS and Tests of Academic Progress would show a larger number and percent of significant correlations. While above chance levels, the elementary

TABLE 70

Frequency of PPDS - External Observer Form Items Significantly Correlated ($p < .05$) with Student Achievement and Average Daily Attendance[1]

Elementary Schools (N=35)

	Iowa Tests of Basic Skills						
	Verbal	Reading	Language	Work Study Skills	Math	Battery Total	% of Average Daily Attendance
Frequency	12	13	14	11	11	12	12
% of Maximum Possible[2]	7.7	8.4	9.0	7.1	7.1	7.7	7.7

Secondary Schools (N=10)

	Tests of Academic Progress		
	Reading	Math	% of Average Daily Attendance
Frequency	4	3	5
% of Maximum Possible	2.9	1.9	3.2

[1]Based on 3350 elementary and 3613 secondary students using school means as the sampling unit

[2]Maximum possible number of correlations = 155

PPDS-EO/ITBS and ADA correlations probably become interpretable only when assessed against mediating/outcome variables correlations.

The intercorrelation between PPDS-EO composites and student achievement and school average daily attendance are presented in Tables 71 and 72, for elementary and secondary schools respectively. For elementary students (Table 71), it can be seen that a generalized relationship between outcome measures and PPDS-EO composites exists for the Administrative Operation of Implementing, and the Functional Areas of Staff Personnel and Fiscal Management. When integrated with the intercorrelation data between PPDS-EO composites and mediating variables previously discussed, it appears, for elementary students, that the principal's performance in Implementing, Staff Personnel, and Fiscal Management kinds of behavior is related to both mediating and outcome measures. A more exacting interpretation of the nature of these relationships is contingent on mediating/outcome variable relationships yet to be discussed.

The significant correlations in Table 71 are all positive in direction and moderate in magnitude, but well indicate the predictability of the ITBS scales from the PPDS-EO composites identified above. The consistency of significant correlations across ITBS subtests for these composites can be partially attributed to the rather strong intercorrelations between the subtests themselves. With this in mind, it is interesting to note that the Implementing composite was the only composite for elementary schools to significantly correlate with ADA.

Intercorrelations between PPDS-EO composites and school outcome variables for secondary schools presented in Table 72 did not evidence any interpretable patterns, partially owing to the rather small sample size on which the correlations were computed.

TABLE 71
Intercorrelation Between PPDS - External Observer Form (Product Scores)
and Student Achievement and Average Daily Attendance
(Elementary Schools, N=35)

EO PPDS Composites	Iowa Tests of Basic Skills Subtests						
Administrative Operations	Verbal	Reading	Language	Work Study Skills	Math	Battery Total	% Average Daily Attendance
Data Collection (19)[1]	.20	.22	.20	.19	.22	.22	.07
Planning (37)	.35*	.36*	.32	.32	.26	.33	.16
Communicating (2)	-.01	-.07	.08	-.09	-.02	.01	.01
Decision Making (42)	.29	.30	.26	.23	.25	.27	.21
Implementing (24)	.41*	.44*	.40*	.37*	.34*	.40*	.34*
Evaluating (31)	.21	.22	.19	.12	.17	.17	.12
Functional Areas of Responsibility							
Curriculum and Instruction (35)	.13	.14	.10	.04	.09	.12	.08
Staff Personnel (12)	.39*	.42*	.37*	.36*	.29	.38*	.21
Pupil Personnel (29)	.13	.16	.06	.03	.01	.10	.19
Support Management (3)	.08	.05	.05	.16	.11	.12	-.07
School Community Interface (3)	.05	.08	.05	.15	.08	.06	.02
Fiscal Management (44)	.47*	.48*	.48*	.51*	.46*	.47*	.23
System Wide Policies and Operations (29)	.34*	.34*	.34*	.30	.30	.31	.22

[1] Number of Items in Composite
*Correlation significantly different from zero, $p < .05$

TABLE 72
Intercorrelation Between PPDS-External Observer Form
(Product Scores) and Student Achievement and
Average Daily Attendance
(Secondary Schools, N=10)

EO - PPDS Composites	Tests of Academic Progress		
Administrative Operations	Reading	Mathematics	% Average Daily Attendance
Data Collection (19)[1]	.01	.11	-.47
Planning (37)	.28	.34	-.58
Communicating (2)	--	--	--
Decision Making (42)	.08	.13	-.39
Implementing (24)	-.27	-.24	-.39
Evaluating (31)	-.26	-.23	-.01
Functional Areas of Responsibility			
Curriculum and Instruction (35)	-.03	-.01	-.51
Staff Personnel (12)	.37	.42	.46
Pupil Personnel (29)	.24	.30	-.33
Support Management (3)	.26	.29	.36
School Community Interface (3)	.43	.46	-.18
Fiscal Management (44)	-.30	-.23	-.35
System Wide Policies and Operations (29)	.22	.24	-.28

[1] Number of items in composite

CORRELATIONS BETWEEN PPDS-PRINCIPAL FORM ITEMS AND COMPOSITES AND MEDIATING VARIABLES

As with other input variable validation analyses, the School Survey, My School, and Learning Environment Inventory instruments were used as measures of the mediating variables of teacher occupational satisfaction and job-related attitudes, and elementary and secondary students assessment of school climate against which the PPDS-Principal Form was compared. Data reported in this section of the report describe the relationship between principals self-ratings of competencies and performance indicators and the mediating variables delineated above.

The PPDS-Principal Form instrument consisted of all 338 verified competencies and performance indicators which were rated by participating principals relative to their perception of how frequently and effectively they exhibited each performance. The 338 items were classified into subscales or "composites" according to categories of the R.O.M.E. Competency Classification Model previously described (p. 5). The composite labels and number of items comprising each composite for the PPDS-Principal Form are given below:

Functional Area of Responsibility	Number of Items
Curriculum and Instruction	74
Staff Personnel	56
Pupil Personnel	66
Support Management	8
School Community Interface	7
Fiscal Management	74
System Wide Policies and Operations	53
TOTAL	338

Administrative Operations	
Data Collection	38
Planning	49
Communicating	101
Decision-Making	46
Implementing	64
Evaluating	40
TOTAL	338

Descriptive statistics for individual items comprising the PPDS-Principal Form can be found in the Data Appendix Volume of this report (Appendix D). Relative to other input sources (students, teachers, and EO), principals as a group rated themselves higher on the items for each composite. In addition, the item and composite variability between principals was somewhat smaller than that for other sources.

Analyses of the correlations between PPDS-Principal Form items and composites and mediating and outcome variables were conducted separately for elementary, secondary, and total school groups. School means were used as the unit of data analysis.

Relationships Between PPDS-Principal Form Ratings and School Survey Factors

Data described in this section summarize the intercorrelations between principals' self-ratings on all PPDS items and composites and the fourteen factors of the School Survey instrument (a measure of teacher job-related attitudes).

Summaries of the number and percent of significant correlations between the 338 item PPDS-Principal Form instrument (both frequency and effectiveness ratings) and the 14 School Survey dimensions for elementary schools are presented in Table 73. As can be seen in the table, little global relationship for elementary schools exists between these two sets of variables. Only 3% of the frequency ratings and 5% of the effectiveness ratings of a total possible of 4,732 correlations reached statistical significance. For the total table, these figures approximate what might be predicted from chance alone.

Certain School Survey dimensions, however, show promise as mediating variables predictable from principals' PPDS ratings. For the frequency rating scale, 37 of 338 possible correlations (10.9%) with the Special Services factor

TABLE 73
Frequency of PPDS - Principal Form Items
(Frequency and Effectiveness Ratings) Significantly
Correlated ($p < .05$) with School Survey Factors
(Elementary Schools, N=35)

School Survey Factors	PPDS Principal Form Ratings		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
1. Administrative Practices (9)[2]	7	10	2.1	2.4
2. Professional Work Load (9)	6	34	1.7	10.1
3. Non Professional Work Load (6)	7	11	2.1	3.3
4. Materials and Equipment (8)	6	25	1.7	7.4
5. Buildings and Facilities (7)	7	11	2.1	3.3
6. Educational Effectiveness (10)	10	41	2.4	12.1
7. Evaluation of Students (10)	4	21	1.2	6.2
8. Special Services (8)	37	7	10.9	2.1
9. School Community Relations (7)	5	14	1.5	4.1
10. Supervisory Relations (10)	20	8	5.9	2.4
11. Colleague Relations (7)	4	5	1.2	1.5
12. Voice in Educational Program (8)	25	7	7.4	2.1
13. Performance and Development (10)	9	6	2.7	1.7
14. Financial Incentives (9)	17	20	5.0	5.9
Total	164	220	3.0	5.0

[1]Maximum possible number of correlations = 338 (Individual), 4732 (Total)
[2]Number of items on scale

of the School Survey were significant. For the effectiveness rating scale, 34 of 338 possible correlations (10.1%) with the Professional Work Load scale, and 41 of 338 possible correlations (12.1%) with the Educational Effectiveness scale were statistically significant. While the number of correlations is not high by absolute standards, it appears that some commonality exists at the elementary level between the PPDS-Principal Form instrument and teachers' assessment of these dimensions of their work environment. As mentioned above, principals as a group tended to rate their performances higher on the average, and demonstrated less rating variability than other input sources. This fact may have served to lower the sensitivity of the PPDS-Principal Form instrument to various dimensions of the School Survey for the elementary school sample.

Table 74 presents the number and percent of significant correlations (both frequency and effectiveness ratings) between the PPDS-Principal Form items and School Survey factors for secondary schools. Compared to data for the elementary sample, the data for secondary schools seem somewhat more encouraging. For the frequency scale, 7.5% of the total possible PPDS-Principal Form item correlations were significantly related to the School Survey instrument. For the effectiveness scale, 6.9% of the total possible correlations were significantly related to the School Survey. While not representing strong "global" relationships between the two instruments, these figures are slightly above what might be expected by chance factors alone.

When compared to table totals, certain dimensions of the School Survey seem predictable as mediating variables from the PPDS-Principal Form for secondary schools. For the frequency rating scale, the School Survey dimensions of Materials and Equipment (29.9%) and Special Services (24.9%) are considerably above the other dimensions as well as the table total. Apparently teachers' attitudes towards the quality and provision of basic educational materials

TABLE 74
Frequency of PPDS - Principal Form Items
(Frequency and Effectiveness Ratings) Significantly
Correlated ($p < .05$) with School Survey Factors
(Secondary Schools, N=9)

School Survey Factors	PPDS-Principal Form Ratings		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
1. Administrative Practices (9)[2]	8	13	2.4	3.8
2. Professional Work Load (9)	21	33	6.2	9.8
3. Non-Professional Work Load (6)	12	29	3.6	8.6
4. Materials and Equipment (3)	101	32	29.9	9.5
5. Buildings and Facilities (7)	9	15	2.7	4.4
6. Educational Effectiveness (10)	18	33	5.3	9.8
7. Evaluation of Students (10)	12	18	3.6	5.3
8. Special Services (8)	84	21	24.9	6.2
9. School Community Relations (7)	14	25	4.1	7.4
10. Supervisory Relations (10)	6	21	1.8	6.2
11. Colleague Relations (7)	7	14	2.1	4.1
12. Voice in Educational Program (8)	8	11	2.4	3.3
13. Performance and Development (10)	22	36	6.5	10.7
14. Financial Incentives (9)	31	25	9.2	7.4
TOTAL	353	326	7.5	6.9

[1] Maximum possible number of correlations = 338 (Individual), 4732 (Total)
[2] Number of items on scale

and special services are predictable from principals' ratings of a wide selection of their own competencies in terms of the frequency with which they are performed. It might be noted that the Special Services factor was also rated high relative to the table total for the elementary schools.

For the effectiveness scale, the School Survey dimensions of Professional Work Load (9.8%), Materials and Equipment (9.5%), Educational Effectiveness (9.8%), and Performance and Development (10.7%) when compared to the table total (6.9%), seem somewhat predictable from the PPDS-Principal Form items. When combining the percentage of significant correlations for the two scales, the Materials and Equipment dimension of the School Survey seems most predictable from principals' self-ratings on competencies comprising the PPDS-Principal Form. This finding may represent a general characteristic of the sample schools in terms of their provision of quality materials and equipment for teachers, with the implication being that principals rating themselves higher on the PPDS are found in schools where teacher attitudes towards this dimension (Materials and Equipment) is more positive. The same general comments for the secondary sample could be made for the Special Services factor.

Table 75 presents the number and percent of significant correlations between the PPDS-Principal Form items (frequency and effectiveness ratings) and School Survey factors for the total sample (n=44). When combining elementary and secondary schools, the frequency rating scale seems to have little in common with the School Survey instrument. If anything, the data indicate that the effectiveness with which principals perceive they carry out certain performances is far more related to teachers' attitudes towards various diemnsions of their work experience than the mere frequency with which the principal performs. The table total for the frequency scale is not above chance levels, and there appear to be no outstanding scales for the School Survey. The effectiveness scale, however, seems to moderately predict several dimensions of the School Survey. The School Survey scales of Non-Professional Work Load (18.9%), Materials and Equipment (17.8%),

TABLE 75
Frequency of PPDS-Principal Form Items
(Frequency and Effectiveness Ratings) Significantly
Correlated ($p < .05$) with School Survey Factors
and Average Daily Attendance (N=44)[1]

School Survey Factors	PPDS-Principal Form Ratings		% of Maximum Possible[2]	
	Frequency	Effectiveness	Frequency	Effectiveness
1. Administrative Practices (9)[3]	3	16	0.9	4.7
2. Professional Work Load (9)	9	37	2.7	10.9
3. Non-Professional Work Load (6)	12	64	3.6	18.9
4. Materials and Equipment (8)	11	60	3.3	17.8
5. Buildings and Facilities (7)	12	73	3.6	21.6
6. Educational Effectiveness (10)	13	67	3.8	19.8
7. Evaluation of Students (10)	8	69	2.4	20.4
8. Special Services (8)	7	32	2.1	9.5
9. School-Community Relations (7)	6	31	1.8	9.2
10. Supervisory Relations (10)	8	14	2.4	4.1
11. Colleague Relations (7)	15	18	4.4	5.3
12. Voice in Educational Programs (8)	8	16	2.4	4.7
13. Performance and Development (10)	17	25	5.0	7.4
14. Financial Incentives (9)	14	49	4.1	14.5
TOTAL	143	571	3.0	12.1
% Average Daily Attendance	22	101	6.5	29.9

[1]
[2]Based on 35 elementary and 9 secondary schools using school means as the sampling unit
[3]Maximum possible number of correlation = 338 (Individual), 4732 (Total)
Number of items on scale

buildings and Facilities (21.6%), Educational Effectiveness (19.8%), Evaluation of Students (20.4%), and Financial Incentives (14.5%) seem moderately predictable from the Principal-PPDS instrument when comparing their respective percentages to the table total (12.1%). Again, these data for the total sample seem to imply that principals who rate their performance of a wide variety of competencies as relatively effective are found in schools where teachers have generally more positive attitudes towards these dimensions of their work experience. Looking at the School Survey scale labels, it appears that a "system" variable of a generalized nature may be represented, with the implication that more effective principals (as inferred from their self-ratings) are found in better schools (as inferred from teachers' ratings of their work environment and the school's programs).

It was noted earlier that the PPDS-Principal Form items were grouped into composites corresponding to seven Functional Areas of Responsibility and six Administrative Operations. The intercorrelations between these two sets of subscale composites and the factors of the School Survey are presented in Table 76 and 77 (frequency and effectiveness ratings respectively) for the elementary school sample.

For the frequency ratings of the PPDS-Principal Form composites (Table 76), it appears that little or no relationship with the School Survey factors exists. Apparently principals' self-ratings of clusters of competencies logically grouped together to yield composite scores have little in common with elementary teachers attitudes towards various dimensions of their work environment. Only two of a possible 182 intercorrelations for this table were statistically significant and these are interpreted as chance effects. It might be mentioned, however, that both of the significant, positive correlations were for the School Survey factor of Financial Incentives (factor 14).

TABLE 76
Intercorrelation Between PPDS - Principal Form Composites
(Frequency Rating) and School Survey Factors
(Elementary Schools, N=35)

PPDS - Principal Form Composites	School Survey Factors													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	.10	.03	-.27	-.05	-.06	.14	.02	-.26	.20	-.23	.01	-.03	-.08	.22
Planning (49)	.08	.06	-.18	-.04	.08	.21	.05	-.23	.16	-.20	-.03	-.07	-.11	.20
Communicating (101)	.02	.02	-.26	-.04	-.04	.12	.01	-.30	.11	-.29	-.06	-.14	-.17	.16
Decision Making (46)	.10	.03	-.27	-.09	-.01	.19	.05	-.25	.22	-.18	.00	-.04	-.03	.25
Implementing (64)	.06	.03	-.22	.01	-.05	.10	-.01	-.27	.16	-.25	-.04	-.09	-.10	.19
Evaluating (40)	.07	.08	-.18	-.02	.06	.19	.05	-.24	.21	-.18	-.02	-.09	-.10	.21
Functional Areas of Responsibility														
Curriculum and Instruction (74)	.04	.07	-.22	-.08	-.01	.17	-.01	-.23	.18	-.21	-.02	-.06	-.08	.17
Staff Personnel (56)	.03	-.05	-.32	-.02	-.03	.08	-.02	-.26	.12	-.30	-.06	-.10	-.14	.16
Pupil Personnel (66)	.03	.05	-.20	-.05	-.08	.15	.03	-.30	.12	-.19	-.05	-.12	-.06	.14
Support Management (8)	.30	.24	.01	.04	.08	.25	.17	-.15	.31	-.15	.12	.02	.00	.38*
School Community Interface (7)	.08	-.02	-.25	-.24	-.10	.12	.09	-.22	.13	-.18	.08	-.08	-.11	.34*
Fiscal Management (74)	.05	.05	-.19	-.01	.05	.15	.03	-.27	.14	-.24	-.04	-.15	-.17	.18
System-Wide Policies and Operations (53)	.13	.03	-.28	-.03	.01	.16	.05	-.25	.23	-.22	.01	-.01	-.11	.27

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 77
Intercorrelation Between PPDS - Principal Form Composites
(Effectiveness Rating) and School Survey Factors
(Elementary Schools, N=35)

PPDS - Principal Form Composites	School Survey Factors													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	.24	.04	-.21	-.01	-.02	.19	.14	-.13	.38*	-.08	.15	.18	.07	.40*
Planning (49)	.17	.07	-.12	.06	.14	.24	.15	-.12	.29	-.11	.07	.13	-.00	.26
Communicating (101)	.20	.12	-.12	.12	.04	.24	.15	-.15	.31	-.07	.11	.12	.00	.23
Decision Making (46)	.22	.10	-.17	.03	.07	.28	.17	-.12	.38*	-.04	.13	.17	.11	.32
Implementing (64)	.17	.08	-.14	.08	.02	.26	.15	-.13	.28	-.13	.06	.12	.03	.22
Evaluating (40)	.22	.10	-.13	.04	.10	.25	.15	-.12	.39*	-.04	.11	.13	.06	.33*
Functional Areas of Responsibility														
Curriculum and Instruction (74)	.20	.18	-.09	.06	.06	.28	.13	-.07	.35*	-.01	.12	.16	.12	.26
Staff Personnel (56)	.17	.01	-.21	.07	.01	.20	.14	-.16	.30	-.10	.00	.17	-.00	.22
Pupil Personnel (66)	.17	.19	-.05	.17	.02	.27	.18	-.12	.28	.00	.14	.13	.11	.14
Support Management (8)	.46	.16	.09	.10	.18	.28	.29	.01	.52*	-.01	.36*	.21	.15	.55*
School Community Interface (7)	.24	.15	-.13	.11	-.03	.34*	.32	.01	.28	.06	.31	.23	.10	.19
Fiscal Management (74)	.15	.03	-.13	.01	.13	.19	.14	-.15	.25	-.15	.06	.03	-.06	.28
System-Wide Policies and Operations (53)	.23	-.01	-.25	.03	.01	.15	.03	-.17	.37*	-.14	.10	.15	-.02	.39*

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

Table 77 presents the intercorrelations between the Principal-PPDS Form composites and School Survey factors for the effectiveness scale. For the total table, 12 of a possible 182 correlations reached statistical significance, an indication of rather low total relationship between the PPDS-Principal Form composites and factors of the School Survey. Some clustering of the significant correlations seems evident, with six of the PPDS-Principal Form composites significantly correlated with School Survey factor 9, teachers' attitudes towards School Community Relations. Factor 14 of the School Survey (Financial Incentives) significantly correlated with 4 of the 13 possible Principal-PPDS composites. With the exception of these two scales, it appears that little commonality between the School Survey instrument and the PPDS-Principal Form composites exists for elementary schools. This finding is not unexpected given the low percentage of significant correlations between the instruments previously described (Table 73). One possible explanation of these data is the small variability between principals in terms of their PPDS item ratings. For this sample, few School Survey dimensions seem predictable as mediating variables from principals' self-ratings of logically grouped competencies.

Summaries of the PPDS-Principal Form composites/School Survey factors intercorrelations for secondary schools are presented in Tables 78 and 79. For the Principal-PPDS frequency ratings (Table 78), 22 of a possible 182 intercorrelations were statistically significant. Of particular interest in terms of predictability are the School Survey factors of Materials and Equipment (4) and Special Services (8). These two scales correlate significantly and positively with 9 and 12 of the 13 possible Principal-PPDS composites respectively, an indication of strong relationships between principals' self-ratings of a variety of competency composites and teacher attitudes towards these dimensions of their working environment. These relationships are difficult to interpret at best, since so many of the PPDS-Principal Form composites

TABLE 78
Intercorrelation Between PPDS-Principal Form Composites
(Frequency Rating) and School Survey Factors
(Secondary Schools, N=9)

PPDS-Principal Form Composites	School Survey Factors													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Data Collection (38)[1]	-.10	.42	.26	.73*	-.04	.23	.27	.73*	-.50	.13	-.20	-.09	.32	-.10
2. Planning (49)	.01	.22	.09	.70*	.29	.34	.47	.91*	-.22	.03	-.27	-.09	.24	.37
3. Communicating (101)	-.07	.50	.35	.69*	.16	.29	.33	.68*	-.21	.19	-.10	-.06	.44	.17
4. Decision-Making (46)	-.04	.41	.26	.79*	.08	.27	.41	.89*	-.31	.13	-.20	-.07	.32	.07
5. Implementing (64)	.05	.36	.21	.67*	.15	.33	.40	.82*	-.13	.13	-.12	-.02	.37	.17
6. Evaluating (40)	.03	.36	.22	.74*	.18	.29	.42	.90*	-.23	.13	-.19	-.02	.28	.19
Functional Areas of Responsibility														
1. Curriculum and Instruction (74)	-.05	.68*	.53*	.75*	-.28	.09	.26	.66*	-.37	.31	-.01	.05	.43	-.43
2. Staff Personnel (56)	-.20	.39	.22	.80*	-.07	.10	.18	.69*	-.40	.03	-.30	-.20	.25	-.22
3. Pupil Personnel (66)	-.16	.42	.25	.76*	-.07	.25	.23	.69*	-.35	.06	-.17	.21	.32	-.17
4. Support Management (8)	.37	.19	.13	.28	.39	.49	.58	.76*	.27	.26	-.10	.27	.35	.65
5. School Community Interface (7)	-.49	-.40	-.51	.41	.16	.40	.17	.36	-.37	-.46	-.33	-.55	-.05	.42
6. Fiscal Management (74)	.23	.23	.12	.50	.36	.46	.59	.86*	.08	.15	-.15	.11	.38	.56
7. System-Wide Policies and Operations (53)	-.04	.20	.07	.60	.16	.35	.38	.78*	-.15	.05	-.30	-.11	.21	.27

[1] Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 79
Intercorrelation Between PPDS-Principal Form Composites
(Effectiveness Rating) and School Survey Factors
(Secondary Schools, N=9)

PPDS-Principal Form Composites	School Survey Factors													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Data Collection (38)[1]	-.15	.39	.27	.52	-.22	.44	.29	.50	-.28	.13	.18	-.16	.40	-.14
2. Planning (49)	.00	.02	-.03	.39	.23	.59	.57	.72*	-.09	-.01	.02	-.17	.18	.59
3. Communicating (101)	-.04	.53	.43	.53	-.27	.53	.41	.54	-.18	.22	.34	-.10	.59	.17
4. Decision-Making (46)	-.20	.14	.10	.38	-.14	.53	.39	.45	-.27	-.02	.25	.31	.23	.13
5. Implementing (64)	.10	.31	.22	.38	-.02	.73*	.58	.64	.14	.20	.14	-.05	.56	.31
6. Evaluating (40)	.04	.31	.26	.40	-.02	.57	.51	.64	-.15	.19	.28	-.05	.31	.22
Functional Areas of Responsibility														
1. Curriculum and Instruction (74)	-.14	.58	.49	.58	-.34	.12	.11	.38	-.43	.18	.27	-.13	.35	-.54
2. Staff Personnel (56)	-.21	.41	.29	.65	-.23	.39	.29	.53	-.36	.03	.16	-.29	.45	-.22
3. Pupil Personnel (66)	-.09	.52	.45	.41	-.45	.53	.42	.44	-.18	.30	.42	-.05	.54	-.23
4. Support Management (8)	.32	-.11	.08	.26	.24	.71*	.49	.28	-.58	.18	.10	.14	.23	.75*
5. School Community Interface (7)	-.50	-.47	-.57	.38	.25	.31	.01	.23	-.38	-.59	-.33	-.65	-.10	.36
6. Fiscal Management (74)	.29	-.01	-.02	.17	.41	.66*	.67*	.67*	.26	.11	.07	.11	.31	.85*
7. System-Wide Policies and Operations (53)	-.14	-.02	-.07	.22	-.02	.69*	.42	.46	.01	-.02	.03	-.31	.17	.39

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit
*Correlation significantly different from zero, $p < .05$

(frequency) reached statistical significance for these two School Survey factors. Suffice it to say, however, that secondary principals' self-ratings of a variety of logically classified competencies are highly and positively associated with teachers' attitudes towards the adequate provision of educational materials and equipment and special services available to students in the school. Apparently principals rating themselves as more frequently carrying out competencies in a variety of Functional Areas and involving several Administrative Operations are associated with schools having teachers whose attitudes towards these School Survey dimensions is very positive. For the Functional Areas of Responsibility composite, one interesting finding is that the Curriculum and Instruction cluster correlated significantly and positively with three of the fourteen School Survey factors. It appears that teachers' attitudes toward their Professional Work Load (factor 2), the provision of quality Materials and Equipment (factor 4), and the offering of Special Services (factor 8) are positively associated with and predictable from principals' self-ratings of the frequency with which they perform Curriculum and Instruction kinds of competencies.

Table 79 summarizes the Principal-PPDS composites/School Survey factors intercorrelations for the effectiveness ratings. Of 182 possible intercorrelations for this table, only 9 reached statistical significance. Four of the 13 possible PPDS-Principal Form composites (Implementing, Support Management, Fiscal Management, System Wide Policies and Operations) were significantly correlated with the School Survey factor labeled Educational Effectiveness (factor 6). These data seem to imply from the principal's point of view that increased competency in implementing basic school policies and fiscal and support management functions relates positively to teachers' attitudes towards the overall educational effectiveness of the secondary school. A general "system" effect may be operative here, with the implication that more educationally effective

schools contain principals more competent in implementing and managing basic school operations. Of additional interest given this rationale, are the three significant Fiscal Management composite correlations with the School Survey factors of Educational Effectiveness (6),, Evaluation of Students (7), and Special Services (8). Principals seeing themselves as more competent in effectively performing Fiscal Management competencies (budgetary matters, largely) are found in schools where teacher attitudes towards these dimensions of the school environment are more positive.

Tables 80 and 81 present the intercorrelations between Principal-PPDS composites/School Survey factors (frequency and effectiveness ratings respectively) for the total sample. For the frequency ratings correlations (Table 80), none of the Principal-PPDS/School Survey correlations approached statistical significance. These findings are not unexpected given the low total relationship between the two instruments in terms of the frequency of significant correlations (refer to Table 75). For the effectiveness ratings correlations (Table 81), 18 of a possible 182 Principal-PPDS composites/School Survey factors relationships were statistically significant. Of interest in the table, are factors 7 (Evaluation of Students) and 10 (Supervisory Relations) of the School Survey. These data for the total sample imply that teachers' attitudes towards the quality of supervisory relations and the school's programs for the fair and adequate evaluation of students are positively associated with princpals' self-ratings of a variety of competency composites. While the significant correlations in this table are not large, indicating modest predictability of the School Survey dimensions (7 and 10), they point how intercorrelations between the two instruments might change when combining elementary and secondary samples.

In summary, it appears that a small number of School Survey scales are predictable from principals' self-ratings of competencies logically classified into composites, though no overall global relationships between the Principal-PPDS

TABLE 80
Intercorrelation Between PPDS - Principal Form Composites (Frequency Rating) and School Survey Factors and Average Daily Attendance (N=44)[1]

Principal PPDS Composite	School Survey Factors														% Average Daily
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Attendance
Data Collection (38)[2]	.02	.10	.07	-.15	.03	-.04	.16	.07	-.15	.16	-.17	-.01	-.03	-.02	.06
Planning (49)	.03	.06	.08	-.13	.04	.07	.21	.09	-.13	.11	-.17	-.07	-.07	-.06	.02
Communicating (101)	.01	.03	.08	-.13	.04	-.03	.15	.07	-.18	.10	-.20	-.05	-.12	-.07	.13
Decision Making (46)	.02	.09	.06	-.18	-.02	.00	.19	.09	-.16	.18	-.13	-.02	-.03	-.01	.02
Implementing (64)	.01	.05	.07	-.14	.08	.03	.13	.05	-.16	.13	-.18	-.07	-.08	-.04	.01
Evaluating (40)	.02	.06	.11	-.10	.05	.06	.20	.09	-.13	.16	-.14	-.04	-.08	-.05	.01
Functional Areas of Responsibility															
Curriculum and Instruction (74)	.02	.09	.17	-.02	.06	.04	.20	.08	-.07	.17	-.12	-.04	-.04	.04	.13
Staff Personnel (56)	.02	.05	.02	-.17	.09	.02	.11	.04	-.13	.10	-.25	-.04	-.11	-.06	.08
Pupil Personnel (66)	.01	.02	.08	-.11	.03	-.05	.18	.07	-.19	.09	-.14	-.06	-.11	-.01	.10
Support Management (8)	.03	.24	.21	-.01	.05	.02	.24	.18	-.03	.25	-.08	.02	.06	.03	-.03
School Community Interface (7)	.06	.01	-.07	-.26	-.09	-.03	.18	.12	-.11	.07	-.24	.04	-.19	-.07	.13
Fiscal Management (74)	.01	.03	.05	-.16	.02	.01	.16	.07	-.19	.10	-.17	-.10	-.10	-.11	-.02
System Wide Policies and Operations (53)	.03	.09	.03	-.23	.01	-.02	.16	.06	-.19	.17	-.18	-.07	-.01	-.09	.01

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit
[2]Number of items in composite

TABLE 81
Intercorrelations Between PPDS - Principal Form Composites (Effectiveness Ratings) and School Survey Factors and Average Daily Attendance (N=44)[1]

Principal PPDS Composites	School Survey Factors														% Average Daily
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Attendance
Data Collection (38)[2]	.04	.26	.11	-.05	.10	.06	.25	.20	-.00	.37*	-.06	.22	.11	.16	.19
Planning (49)	.04	.19	.11	-.03	.16	.18	.29	.21	.00	.26	-.11	.12	.05	.07	.13
Communicating (101)	.02	.24	.19	.03	.21	.11	.30*	.23	-.01	.32*	-.04	.20	.08	.13	.27
Decision Making (46)	.02	.24	.14	-.04	.12	.13	.32*	.22	-.01	.37*	-.05	.20	.09	.17	.15
Implementing (64)	.01	.19	.13	-.02	.15	.07	.27	.21	-.02	.28	-.10	.12	.07	.13	.17
Evaluating (40)	.02	.24	.16	.01	.13	.17	.29	.20	.00	.37*	-.03	.19	.08	.14	.14
Functional Areas of Responsibility															
Curriculum and Instruction (74)	.02	.26	.26	.10	.17	.16	.31*	.18	.08	.35*	.01	.23	.10	.21	.21
Staff Personnel (56)	.02	.22	.11	.00	.21	.14	.27	.22	.03	.31*	-.10	.15	.07	.14	.24
Pupil Personnel (66)	-.00	.21	.25	.10	.23	.08	.34*	.23	.02	.29	.03	.23	.09	.22	.29
Support Management (8)	.04	.41*	.15	.01	.10	.15	.33*	.30*	.03	.50*	.00	.32*	.16	.19	.17
School Community Interface (7)	.06	.17	.07	-.15	.21	.10	.36*	.30*	.11	.21	-.10	.25	.02	.11	.25
Fiscal Management (74)	.03	.14	.04	-.08	.06	.13	.23	.19	-.07	.22	-.13	.06	.02	.01	.06
System Wide Policies and Operations (53)	.04	.22	.02	-.16	.08	.04	.19	.12	-.09	.35*	-.13	.13	.09	.03	.12

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit
[2]Number of items in composite
*Correlation significantly different from zero, $p < .05$

items and School Survey factors were found. In addition, it appears that the pattern of predictability of School Survey scales changes somewhat when elementary, secondary, or total sample data are assessed. These findings seemingly point out the importance of delineating separate teacher attitude scales for the separate samples when using principals' self-assessments as an input variable within the G.P.A.S. Given the magnitude of significant intercorrelations for the secondary sample (Tables 78 and 79), it will be interesting to see how these relationships and conclusions hold when sample size is increased using anticipated data from 1975-1976 assessments in progress.

Relationships Between PPDS-Principal Form Items and School Climate and Learning Environment

A second set of variables within the G.P.A.S. assumed to mediate between principal performance and school outcome measures are assessments of the general school climate and learning environment by elementary and secondary students respectively. For elementary students, the measure of this mediating variable was the 45 item, five factor My School (MS) inventory. For secondary students, the 105 item, 15 factor Learning Environment Inventory (LEI) was used.

The number and percentage of PPDS-Principal Form items (frequency and effectiveness ratings) significantly correlated with the My School factors for elementary schools is presented in Table 82. The table totals for the frequency (9.6%) and effectiveness (10.0%) ratings indicate a low level of predictability for the My School instrument as a measure of student attitudes mediating between principal performance and school outcomes. For the frequency scale of the Principal-PPDS, the My School scales of Cohesiveness (13.9%) and Competitiveness (17.1%) stand out relative to the other scales. For the effectiveness scale of the Principal-PPDS, the My School scales of Difficulty (24%) and Satisfaction (10.1%) seem somewhat predictable. These data

TABLE 82
Frequency of PPDS Principal Form Items
Significantly Correlated ($p < .05$) with
My School Inventory Factors
(Elementary Schools, N=36)[1]

	Principal PPDS Self-Ratings		% of Maximum Possible[2]	
My School Factors	Frequency	Effectiveness	Frequency	Effectiveness
1. Satisfaction	27	34	8.0	10.1
2. Friction	9	19	2.7	5.6
3. Competitiveness	39	10	17.1	3.0
4. Difficulty	21	81	6.2	24.0
5. Cohesiveness	47	25	13.9	7.4
TOTAL	143	169	9.6	10.0

[1]Based on 35 principals and 3350 students using school means as the sampling unit
[2]Maximum possible number of correlations = 338 (Individual), 1690 (Total)

seemingly indicate that the frequency and effectiveness with which principals rate themselves as performing a wide variety of functions in their schools is differentially associated with student attitudes toward the general school climate. Comparing the two PPDS-Principal Form scales, the Difficulty and Competitiveness dimensions of the My School instrument seem to be moderately predictable as student mediating variables.

Table 83 presents the PPDS-Principal Form composites/My School factors intercorrelations (both frequency and effectiveness ratings) for elementary schools. Only 3 of a possible 130 intercorrelations were statistically significant, indicating a negligible relationship between these variables. No outstanding trends are apparent in the data, with the exception of noting that all three significant correlations were modest in size, were for the PPDS-Principal Form effectiveness scale, and correlated with the My School Difficulty scale. If the significant correlations are considered non-chance effects, they imply that principals' self-ratings of the effectiveness with which they carry out functions in Pupil Personnel and School Community Interface competency areas are associated with elementary students' perception of the general school climate as less Difficult.

Table 84 summarizes the number and percent of significant correlations between PPDS-Principal Form items (frequency and effectiveness ratings) and factors of the Learning Environment Inventory for secondary schools. The table totals for the frequency rating (6.8%) and the effectiveness rating (4.1%) do not indicate any overall relationship between the two instruments, possibly an artifact of the rather small sample size. For the frequency scale of the PPDS-Principal Form, the LEI factor of Favoritism (14.2%) seems somewhat predictable when comparing it to the percentage for the table total (6.8%).

TABLE 83
Intercorrelation Between PPDS - Principal Form Composites
(Frequency and Effectiveness Ratings) and My School Factors
(Elementary Schools, N=35)

Principal PPDS Composites	My School Factors									
	Satisfaction		Friction		Competitiveness		Difficulty		Cohesiveness	
Administrative Operations	Freq	Effect	Freq	Effect	Freq	Effect	Freq	Effect	Freq	Effect
Data Collection (38)[1]	.07	-.06	.13	.20	-.22	.06	.23	.22	.13	.12
Planning (49)	.04	.03	.02	.03	-.26	-.00	.21	.25	.28	.31
Communicating (101)	-.07	-.15	.12	.21	-.24	.08	.20	.31	.09	.02
Decision Making (46)	.04	-.05	.15	.20	-.14	.08	.19	.25	.22	.20
Implementing (64)	.05	-.08	.06	.12	-.21	.01	.23	.36*	.20	.21
Evaluating (40)	-.00	-.02	.09	.14	-.21	.05	.18	.20	.23	.23
Functional Area PPDS Composites										
Curriculum and Instruction (74)	.12	-.16	.16	.21	-.13	.11	.20	.28	.12	.13
Staff Personnel (56)	-.02	-.11	.00	.13	-.24	.02	.12	.24	.20	.11
Pupil Personnel (66)	-.20	-.24	.21	.25	-.16	.11	.27	.36*	.05	.04
Support Management (8)	.02	.05	.09	.11	-.21	.03	.32	.23	.23	.18
School Community Interface (7)	.06	-.08	.14	.24	-.27	.07	.12	.39*	.13	.06
Fiscal Management (74)	.06	.11	.14	.06	-.27	.01	.12	.27	.13	.31
System-Wide Policies and Operations (53)	.03	.04	.07	.09	-.22	-.01	.17	.16	.19	.15

[1]Number of items in composites
*Correlation significantly different from zero, $p < .05$

TABLE 84
Frequency of PPDS Principal Form Item Significantly Correlated ($p < .05$) with Learning Environment Inventory Factors (Secondary Schools, N=10)[1]

	Principal PPDS Self-Ratings		% of Maximum Possible[2]	
LEI FACTORS	Frequency	Effectiveness	Frequency	Effectiveness
1. Intimacy	32	12	9.5	3.6
2. Diversity	21	10	6.2	2.9
3. Formality	18	16	5.3	4.7
4. Speed	20	13	5.9	3.8
5. Environment	32	11	9.5	3.3
6. Friction	16	11	4.7	3.3
7. Goal Direction	21	15	6.2	4.4
8. Favoritism	48	21	14.2	6.2
9. Difficulty	25	14	7.2	4.1
10. Apathy	19	9	5.6	2.7
11. Democratic	32	18	9.5	5.3
12. Cliqueness	5	12	1.5	3.6
13. Satisfaction	20	13	5.9	3.8
14. Disorganization	20	16	5.9	4.7
15. Competitiveness	16	19	4.7	5.6
TOTAL	345	210	6.8	4.1

[1] Based on 10 principals and 3613 students using school means as the sampling unit
[2] Maximum possible number of correlations = 338(Individual), 5070(Total)

Tables 85 and 86 summarize the intercorrelations between PPDS-Principal Form composites/Learning Environment Inventory factors for secondary schools For the frequency ratings (Table 85), 14 of a possible 195 intercorrelations were statistically significant, a finding slightly above what might be expected by chance factors alone (9.8 correlations). Some clustering of the data seems evident, with 6 and 5 of a possible 13 intercorrelations for the LEI scales of Friction (factor 6) and Favoritism (factor 8) respectively, significantly different from zero ($p < .05$). Apparently, when principals are asked to rate the frequency with which they perform certain clusters of competencies, a variety of Administrative Operations in Staff Personnel and Fiscal Management areas are associated with secondary students' perception of less Friction and Favoritism in the learning environment. This seemingly implies that principals frequently performing in these areas are associated with (employed in) secondary schools having students perceiving a generally more comfortable environment in terms of these interpersonal relations variables. It might be recalled, however, that these self-assessment-student attitude relationships derived from the Principal-PPDS represent findings somewhat inconsistent with those derived from other input sources. For this table, it is interesting to note that 6 Principal-PPDS composites significantly correlated with the LEI factor of Friction, even though the percentage of total PPDS-Principal Form items correlating with this scale was at chance levels (refer to Table 84). This may indicate that composite correlations are somewhat better, "truer" predictors of secondary students' attitudes towards the general learning environment in the school.

For the effectiveness ratings (Table 86), only seven of a possible 195 intercorrelations between the Principal-PPDS composites/Learning Environment Inventory factors were significantly different from zero. Though below what would be predicted from chance alone for the table total, the significant

TABLE 85
Intercorrelation Between PPDS - Principal Form Composites
(Frequency Rating) and Learning Environment Inventory Factor
(Secondary Schools, N=10)

Principal PPDS Composites	Learning Environment Inventory Factors														
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data Collection (38)[1]	.06	-.15	.31	-.16	.22	-.54	.27	-.65*	-.52	.16	-.42	.01	-.37	.44	-.10
Planning (49)	-.21	-.17	.05	.01	-.01	-.72*	.06	-.60	-.43	.04	-.40	-.13	-.15	.27	-.26
Communicating (101)	.17	-.03	.42	-.26	.35	-.63*	.43	-.71	-.54	.31	-.54	-.05	-.51	.55	.03
Decision Making (46)	-.07	-.07	.16	-.07	.13	-.74*	.18	-.58	-.50	.19	-.38	-.04	-.28	.38	-.13
Implementing (64)	-.07	-.08	.26	-.11	.15	-.70*	.23	-.68*	-.48	.18	-.46	-.08	-.32	.40	-.08
Evaluating (40)	-.16	-.19	.10	.00	.01	-.62	.07	-.56	-.46	.04	-.33	-.03	-.16	.30	-.23
Functional Areas of Responsibility															
Curriculum & Instruction (74)	.26	-.13	.39	-.27	.37	-.52	.45	-.59	-.67*	.36	-.43	-.01	-.50	.64*	.06
Staff Personnel (56)	.10	-.09	.29	-.19	.28	-.68*	.33	-.65*	-.59	.28	-.45	-.03	-.44	.50	-.06
Pupil Personnel (66)	.15	-.09	.29	-.18	.29	-.54	.29	-.62	-.50	.20	-.40	.02	-.43	.45	-.12
Support Management (8)	-.49	-.27	.19	.13	-.27	-.38	-.02	-.67*	-.13	-.25	-.45	-.16	.10	.08	.13
School Community Interface (7)	.08	-.04	-.33	.04	-.19	-.08	-.34	-.10	.26	-.47	-.07	.13	.21	-.43	-.77*
Fiscal Management (74)	-.21	-.05	.13	-.03	.02	-.78*	.10	-.61	-.40	.12	-.42	-.14	-.18	.29	-.13
System Wide Policies and Operations (53)	.16	-.16	.20	.01	.02	-.59	.12	.64*	-.37	-.01	-.39	.02	-.20	.27	-.19

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 86
Intercorrelation Between PPDS - Principal Form Composites (Effectiveness Rating)
and Learning Environment Inventory Factors
(Secondary Schools, N=10)

Principal PPDS Composites	Learning Environment Inventory Factors														
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data Collection (38)[1]	.13	.10	.16	-.11	.22	-.53	.10	-.38	-.36	.15	-.17	.11	-.30	.28	-.21
Planning (49)	-.25	.02	-.13	.16	-.17	-.68*	-.14	-.35	-.22	-.05	-.17	.00	-.00	.06	-.39
Communicating (101)	.20	.19	.19	-.18	.31	-.64*	.19	-.42	-.39	.27	-.26	.01	-.39	.38	-.14
Decision Making (46)	-.03	.15	-.04	.03	.09	-.69*	-.02	-.27	-.30	.13	-.11	.08	-.17	.18	-.27
Implementing (64)	-.02	.15	.21	-.09	.18	-.74*	.17	-.54	-.33	.21	-.35	-.01	-.31	.32	-.09
Evaluating (40)	-.10	.07	-.01	.07	.03	-.63*	-.04	-.31	-.31	.07	-.11	.11	-.12	.18	-.26
Functional Areas of Responsibility															
Curriculum & Instruction (74)	.33	.07	.12	-.17	.36	-.46	.21	-.24	-.50	.31	-.09	.12	-.41	.43	-.13
Staff Personnel (56)	.16	.15	.12	-.16	.29	-.73*	.18	-.43	-.44	.29	-.28	-.03	-.39	.37	-.16
Pupil Personnel (66)	.23	.24	.19	-.13	.29	-.53	.16	-.30	-.32	.23	-.16	.14	-.34	.33	-.15
Support Management (8)	-.38	.18	.19	.21	-.18	-.37	-.11	-.42	-.17	-.20	-.18	.17	.06	-.08	-.12
School Community Interface (7)	.03	.00	-.39	-.05	-.09	-.04	.44	-.04	.23	-.40	-.02	-.23	.14	-.45	-.76
Fiscal Management (74)	-.26	.05	.01	.06	-.05	-.75*	-.03	-.45	-.27	.06	-.28	-.08	-.08	.16	-.21
System Wide Policies and Operations (53)	-.10	.17	.05	.11	.03	-.56	-.05	-.34	-.13	-.01	-.12	.20	-.14	.09	-.29

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

correlations seem interpretable since they are all negative in direction and all cluster on the Friction scale of the LEI. For this scale, as with the frequency ratings, a similar pattern of PPDS-Principal Form composites exists. Apparently the effectiveness with which principals see themselves as performing a wide variety of administrative operations competencies in relation to Staff Personnel and Fiscal Management areas is associated with generally less school Friction as perceived by secondary students. Comparing the two tables (85 and 86), it seems that the Friction scale of the LEI shows the most promise as a mediating variable when related to principals' self-assessment of the frequency and effectiveness with which they perform a wide variety of school functions.

CORRELATIONS BETWEEN PPDS-PRINCIPAL FORM ITEMS AND COMPOSITES AND OUTCOME VARIABLES: ACHIEVEMENT TEST PERFORMANCES AND SCHOOL AVERAGE DAILY ATTENDANCE

This section of the report summarizes the relationships between PPDS-Principal Form items and composites and elementary and secondary student achievement test performance and school average daily attendance. As with other PPDS input sources (students, teachers, EO) it was predicted that Principal-PPDS items and composites would show less strong relationships with outcome than with mediating variables.

Tables 87 and 88 summarize the number and percent of significant correlations between PPDS-Principal Form items and student achievement and average daily attendance for elementary and secondary schools respectively. For elementary schools (Table 87), the total percentages for frequency and effectiveness ratings (3.9% and 5.8% respectively) indicate little relationship between student achievement and the PPDS-Principal Form instrument. Relative to table totals, the most predictable achievement variable for elementary schools is the ITBS Battery Total, with 7.4% of the PPDS items significantly

TABLE 87
Frequency of PPDS - Principal Form Items (Frequency and Effectiveness Ratings)
Significantly Correlated with Student Achievement and
Average Daily Attendance
(Elementary Schools, N=35)

Iowa Tests of Basic Skills Subtests	PPDS- Principal Form Ratings		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
Verbal	12	21	3.6	6.2
Reading	13	13	3.9	3.9
Language	9	20	2.7	5.9
Work Study Skills	15	20	4.4	5.9
Math	11	19	3.3	5.6
Battery Total	20	25	5.9	7.4
TOTAL	80	118	3.9	5.8
% Average Daily Attendance	10	24	3.0	7.1

[1]Maximum number of correlations = 338

TABLE 88
Frequency of PPDS - Principal Form Items (Frequency and Effectiveness Ratings)
Significantly Correlated with ($p < .05$)
Student Achievement and Average Daily Attendance
(Secondary Schools, N=10)

Tests of Academic Progress	PPDS-Principal Form Ratings		% of Maximum Possible[1]	
	Frequency	Effectiveness	Frequency	Effectiveness
Reading	16	4	4.7	1.2
Math	12	5	3.6	1.5
TOTAL	28	9	4.2	1.4
% Average Daily Attendance	13	26	3.8	7.7

[1]Maximum number of correlations = 338

different from zero for the effectiveness scale. These data indicate that student achievement as measured by standardized test performances, is generally not predictable from principals' individual item ratings. The same finding appears for the average daily attendance variable, with only 7.1% of the PPDS-Principal Form items significantly different from zero for the effectiveness scale.

For secondary schools in the sample (Table 88), the frequency of significant correlations data are even less promising. The only outcome showing what can be considered non-chance relationships is average daily attendance for the Principal-PPDS effectiveness scale with 7.7% of the maximum possible number of correlations significantly different from zero.

When the PPDS-Principal Form items are collected into composites and correlated with outcome variables, some interpretable relationships seem evident. Tables 89 and 90 present the intercorrelations between PPDS-Principal Form composites and student achievement and average daily attendance for elementary schools. For the frequency rating (Table 89), no strong relationships appear. The two significant correlations with the Support Management composite are moderate in size, and probably represent effects attributable to chance factors.

The intercorrelations data for the effectiveness scale (Table 90) seem somewhat more interpretable with 11 of 91 possible correlations significantly different from zero. Some patterning in the correlations appears for the Functional Areas composites of Support Management, School Community Interface, and Fiscal Management. For these composites, all student achievement correlations were either significantly different from zero, or closely approximated values necessary to reach statistical significance. Remembering that the inter-correlations between the subtests of the ITBS were extremely high, the Battery Total measure correlations are most meaningful for the student

TABLE 89
Intercorrelation Between PPDS - Principal Form Composites (Frequency Rating)
and Student Achievement and Average Daily Attendance
(Elementary Schools, N=34)

PPDS - Principal Form Composites	Iowa Test of Basic Skills Subtests						
Administrative Operations	Verbal	Reading	Language	Work Study Skills	Math	Battery Total	% Average Daily Attendance[1]
Data Collection (38)[2]	.20	.16	.18	.19	.17	.22	.13
Planning (49)	.20	.17	.18	.19	.13	.22	.14
Communicating (101)	.16	.15	.16	.16	.14	.20	.18
Decision-Making (46)	.21	.18	.21	.20	.18	.24	.06
Implementing (64)	.14	.12	.14	.15	.13	.18	.09
Evaluating (40)	.18	.16	.18	.18	.15	.20	.09
Functional Areas of Responsibility							
Curriculum and Instruction (74)	.10	.07	.09	.12	.06	.13	.07
Staff Personnel (56)	.12	.09	.10	.11	.07	.15	.07
Pupil Personnel (66)	.17	.16	.20	.17	.16	.21	.18
Support Management (8)	.29	.27	.30	.35*	.31	.36*	.16
School Community Interface (7)	.17	.18	.17	.16	.11	.17	.23
Fiscal Management (74)	.25	.23	.25	.24	.22	.28	.13
System-Wide Policies and Operations (53)	.20	.17	.17	.17	.16	.22	.12

[1]Based on N=35 Elementary Schools
[2]Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 90
Intercorrelation Between PPDS - Principal Form Composites (Effectiveness Rating)
and Student Achievement and Average Daily Attendance
(Elementary Schools, N=34)

PPDS - Principal Form Composites	Iowa Test of Basic Skills Subtests						
Administrative Operations	Verbal	Reading	Language	Work Study Skills	Math	Battery Total	% Average Daily Attendance[1]
Data Collection (38)[2]	.28	.24	.24	.24	.27	.29	.11
Planning (49)	.27	.21	.22	.23	.21	.28	.09
Communicating (101)	.26	.21	.23	.20	.24	.28	.21
Decision-Making (46)	.29	.23	.27	.25	.28	.29	.06
Implementing (64)	.28	.22	.24	.24	.27	.30	.14
Evaluating (40)	.26	.21	.23	.23	.25	.28	.03
Functional Areas of Responsibility							
Curriculum and Instruction (74)	.21	.17	.19	.21	.19	.23	.05
Staff Personnel (56)	.21	.15	.18	.15	.17	.20	.09
Pupil Personnel (66)	.25	.20	.24	.20	.25	.26	.21
Support Management (8)	.37*	.32	.32	.33*	.38*	.42*	.21
School Community Interface (7)	.38*	.34*	.33*	.30	.32	.34*	.35*
Fiscal Management (74)	.34*	.30	.31	.28	.32	.38*	.14
System-Wide Policies and Operations (53)	.24	.19	.18	.19	.23	.25	.08

[1]Based on N=35 Elementary Schools
[2]Number of items in composite
*Correlation significantly different from zero, $p < .05$

achievement variable. The data indicate that principals rating themselves as more effective in Support Management, School Community Interface, and Fiscal Management kinds of performances are associated with elementary schools having somewhat higher student achievement than schools having principals rating themselves as less effective relative to these composites. It is interesting to note that none of the Administrative Operations composites correlated significantly with ITBS Battery Total scores, a finding having possible implications for the grammatical content of items comprising the Principal-PPDS instrument. When compared to other table correlations, the relationship between the School Community Interface composite and average daily attendance seems interpretable, with the implication being that principals rating themselves higher in School Community performances are associated with schools having generally better average daily attendance. Again, the simple case may be that better schools have better average daily attendance, as well as principals who rate themselves relative to other principals as more competent. In summary for elementary schools in the sample, the ITBS Battery Total is moderately predictable from principals' self-ratings of competencies in three Functional Areas composites. In addition, average daily attendance is moderately predictable from Principal-PPDS ratings in the area of School Community Interface.

Tables 91 and 92 present the intercorrelations between PPDS-Principal Form composites and outcome variables for secondary schools. For the two tables, no correlations were significangly different from zero, a finding partially attributed to the small sample size. It is interesting to note however, that the correlations were largely negative in direction, and that the School Community Interface composite for both frequency and effectiveness ratings was positively correlated with student achievement on the Tests of

TABLE 91
Intercorrelation Between PPDS - Principal Form Composites
(Frequency Rating) and Student Achievement and Average Daily Attendance
(Secondary Schools, N=10)

Principal PPDS Composites	Tests of Academic Progress		
Administrative Operations	Reading	Math	% Average Daily Attendance
Data Collection (38)[1]	-.34	-.26	-.16
Planning (49)	-.18	-.09	-.37
Communicating (101)	-.36	-.29	-.02
Decision-Making (46)	-.27	-.18	-.26
Implementing (64)	-.28	-.20	-.27
Evaluating (40)	-.24	-.15	-.33
Functional Areas of Responsibility			
Curriculum and Instruction (74)	-.51	-.44	.09
Staff Personnel (56)	-.37	-.28	-.16
Pupil Personnel (66)	-.31	-.23	-.07
Support Management (8)	-.05	-.01	-.48
School Community Interface (7)	.46	.50	-.24
Fiscal Management (74)	-.19	-.10	-.36
System Wide Policies and Operations (53)	-.17	-.09	-.36

[1]Number of items in composite

TABLE 92

Intercorrelation Between PPDS - Principal Form Composites
(Effectiveness Rating) and Student Achievement and Average Daily Attendance
(Secondary Schools, N=10)

Principal PPDS Composites	Tests of Academic Progress		
Administrative Operations	Reading	Math	% Average Daily Attendance
Data Collection (38)[1]	-.14	-.06	-.02
Planning (49)	.06	.16	-.31
Communicating (101)	-.16	-.08	.09
Decision Making (46)	-.03	.07	-.14
Implementing (64)	-.13	-.04	-.16
Evaluating (40)	-.07	.03	-.19
Functional Areas Of Responsibility			
Curriculum and Instruction (74)	-.29	-.21	.20
Staff Personnel (56)	-.18	-.09	-.02
Pupil Personnel (56)	-.11	-.02	.20
Support Management (8)	.24	.29	-.31
School Community Interface (7)	.46	.49	-.20
Fiscal Management (74)	-.04	.05	-.35
System Wide Policies and Operations (53)	.10	.19	-.17

[1]Number of items in composite

Academic Progress. With an increase in sample size, findings for this composite similar to those for elementary schools might be predicted.

When the elementary and secondary samples are combined and Principal-PPDS composites (for frequency and effectiveness ratings) are correlated with school average daily attendance (see Tables 80 and 81), not a single coefficient was found to be statistically significant, nor did any approach significance.

In summarizing the relationship between PPDS-Principal Form items and composites and outcome variables within the G.P.A.S., it appears that few significant findings emerge, a finding consistent with previously stated assumptions. One factor possible effecting these relationships is the general "cohesiveness" in principals' self-ratings, having the effect of reducing the total variability taken into account when correlational analyses are computed.

CORRELATIONS BETWEEN MEDIATING AND OUTCOME VARIABLES

It was hypothesized within the G.P.A.S. that stronger relationships would be found between "mediating" and "outcome" variables, than between "input" and outcome variables owing to the greater directness of influence of teacher and school climate factors on student performance and school attendance relative to principal impact. The following sections of the report, while not directly describing "validation" analyses results for particular principal performance items and composites, highlight relationships between mediating and outcome variables which can be useful in deriving conclusions and in interpreting validation data.

Relationships Between School Survey Factors and Student Achievement and Average Daily Attendance

Tables 93 and 94 present the intercorrelations between School Survey factors and student achievement and average daily attendance for elementary and secondary schools respectively. Some markedly different results are evident when comparing the elementary and secondary samples. For the elementary schools, 86% (72 out of 84 possible achievement correlations) were statistically significant, whereas none of the School Survey/student achievement correlations reached significance for the secondary sample. The secondary school results are partially explained by the rather small sample size, though the magnitude of several correlations approached significance at the .05 level. The rather large number of significant correlations for the elementary sample points out the strong inter-relationships between various subtests of the Iowa Tests of Basic Skills. As mentioned elsewhere in this report, supplemental analyses on the ITBS showed high positive correlations approaching .95 between these achievement indices. The data for elementary schools do, however, point out

TABLE 93
Intercorrelation Between School Survey Factors (Teacher Satisfactions) and Student Achievement and Average Daily Attendance
(Elementary Schools, N=35)

School Survey Factors	Iowa Tests of Basic Skills Subtests						
	Vocabulary	Reading	Language	Work Study	Math	ITBS Total	% Average Daily Attendance[2]
1. Administrative Practice (9)[1]	.49*	.50*	.49*	.55*	.49*	.53*	.27
2. Professional Work Load (9)	.40*	.44*	.42*	.45*	.43*	.43*	.27
3. Non Professional Work Load (6)	.27	.31	.28	.31	.28	.31	.27
4. Materials and Equipment (8)	.21	.23	.20	.20	.25	.22	.22
5. Buildings & Facilities (7)	.47*	.50*	.42*	.42*	.38*	.49*	.25
6. Educational Effectiveness (10)	.81*	.82*	.83*	.82*	.76*	.80*	.55*
7. Evaluation of Students (10)	.68*	.70*	.69*	.73*	.67*	.67*	.57*
8. Special Services (8)	.48*	.48*	.43*	.49*	.47*	.45*	.13
9. School Community Interface (7)	.49*	.47*	.50*	.53*	.57*	.51*	.08
10. Supervisory Relations (10)	.37*	.41*	.41*	.36*	.39*	.33*	.19
11. Colleague Relations (7)	.57*	.55*	.54*	.56*	.59*	.54*	.31
12. Voice in Educational Programs (8)	.46*	.43*	.41*	.44*	.38*	.41*	.27
13. Performance and Development (10)	.35*	.35*	.36*	.40*	.40*	.35*	.14
14. Financial Incentives (9)	.41*	.40*	.37*	.47*	.41*	.45*	.09

[1]Number of items on scale
[2]Based on a sample of 36 schools
*Correlation significantly different from zero, $p < .05$

TABLE 94
Intercorrelation Between School Survey Factors and
Student Achievement and Average Daily Attendance
(Secondary Schools, N=9)

School Survey Factors	Tests of Academic Progress: Reading	Math	% Average Daily Attendance
1. Administrative Practices (9)[1]	-.19	-.22	-.05
2. Professional Work Load (9)	-.56	-.55	.45
3. Non Professional Work Load (6)	-.45	-.45	.48
4. Materials and Equipment (8)	-.48	-.43	-.16
5. Buildings and Facilities (7)	-.07	-.07	-.84*
6. Educational Effectiveness (10)	.58	.57	.36
7. Evaluation of Students (10)	.25	.25	.24
8. Special Services (8)	-.21	-.15	-.24
9. School Community Relations (7)	.24	.19	.14
10. Supervisory Relations (7)	-.18	-.19	.42
11. Colleague Relations (7)	.16	.13	.67*
12. Voice in Educational Programs (8)	-.28	-.31	.13
13. Performance and Development (10)	-.20	-.21	.55
14. Financial Incentives (9)	.61	.60	-.52

[1]Number of items on scale
*Correlation significantly different from zero, $p < .05$

the predictive relationship between the School Survey factors as measures of teachers' job-related attitudes and student achievement.

Of particular interest in Table 93 for the elementary sample, are the School Survey scales of Educational Effectiveness (6) and Evaluation of Students (7). The intercorrelations between these scales and the ITBS subtests show a rather strong association between teachers' perception of the school's general educational effectiveness as regards academics and curricula, and its programs, procedures, and materials for adequately evaluating students, and elementary student achievement scores. The correlations would predict that teachers having poorer attitudes towards these dimensions of their working environment are found in schools with relatively lower student achievement. These same two School Survey scales (6 and 7) were the only scales to correlate significantly with average daily attendance. What might be represented in the data is the global nature of the schools in the sample, and their teacher/student/school environment characteristics. It is reasonable to assume, for example, that better school systems, having more effective school programs, are generally associated with better teacher work attitudes, higher average daily attendance, and thus, higher student achievement.

Data showing the intercorrelation between the School Survey factors and average daily attendance for the combined groups is presented in Table 95. When the elementary and secondary samples were combined (n=44) 50% (7 out of 14 possible correlations) were statistically significant.

In summary, it appears that the relationships between the School Survey, as a measure of teacher attitudes "mediating" the school environment, and elementary student achievement are rather strong in terms of the frequency of significant correlations, though the magnitude

TABLE 95
Correlation Between School Survey Factors
(Teacher Satisfaction) and % Average Daily Attendance (N=44)[1]

School Survey Factors	% Average Daily Attendance
1. Administrative Practices (9)[2]	.33*
2. Professional Work Load (9)	.42*
3. Non-Professional Work Load (6)	.47*
4. Materials and Equipment (8)	.25
5. Buildings and Facilities (7)	.28
6. Educational Effectiveness (10)	.53*
7. Evaluation of Students (10)	.54*
8. Special Services (8)	.26
9. School Community Relations (7)	.23
10. Supervisory Relations (10)	.20
11. Colleague Relations (7)	.54*
12. Voice in Educational Program (8)	.13
13. Performance and Development (10)	.38*
14. Financial Incentives (9)	.11

[1]Based on 35 elementary and 9 secondary schools using school means as the sampling unit
[2]Number of items on scale
*Correlation significantly different from zero, $p < .05$

of relationships for the various scales varies from moderate to high. For the total sample, it appears that average daily attendance as an outcome measure is predictable from several School Survey factors, though the correlations were moderate in size.

Relationships Between the My School and Learning Environment Inventory and Student Achievement and Average Daily Attendance

The data derived from correlating the school climate/learning environment measures with outcome variables were somewhat supportive of the predicted strong relationships between these two sets of variables. The relevant intercorrelations for elementary and secondary schools are presented in Tables 96 and 97.

For the elementary sample, 31% of the 35 correlations were found to be statistically significant. For the secondary schools (Table 97), 22% of the 45 possible correlations were statistically significant. The magnitude of the significant correlations for the secondary sample was somewhat higher than that for the elementary sample. Owing to the rather high intercorrelation between the ITBS subtests as mentioned above, the most meaningful correlations for elementary schools are those between the ITBS Total score and average daily attendance, and the My School Difficulty (read "Easiness") and Cohesiveness (read "lack of Cohesiveness") scales. Apparently the degree to which elementary students see the school and school climate as not being overly demanding and loosely organized and structured in terms of interpersonal relationships with others, is positively related to their achievement test performances. The scores on the Difficulty factor of the My School are also related to average daily attendance in this sample. In comparing the magnitude of the correlations between the Difficulty and Cohesiveness scales and the ITBS Total scores, the Difficulty factor accounts for approximately

TABLE 96
Intercorrelation Between My School Factors and Student Achievement
and Average Daily Attendance
(Elementary Schools, N=35)

My School Factors[1]	Iowa Tests of Basic Skills Subtests: Vocabulary	Reading	Language	Work Study	Math	ITBS Total	% Average Daily Attendance[2]
Satisfaction	.21	.22	.13	.23	.14	.19	-.08
Friction	.18	.18	.26	.21	.31	.19	.30
Competitiveness	.11	.13	.14	.11	.21	.13	.04
Difficulty	.65*	.60*	.65*	.66*	.63*	.65*	.55*
Cohesiveness	.35*	.34*	.31	.37*	.28	.35*	-.27

[1]Due to scoring procedure applied, scale interpretation should be in direction opposite that listed (e.g., Satisfaction = Dissatisfaction)
[2]A.D.A. correlation based on N=36 Elementary schools
*Correlation significantly different from zero, $p < .05$

TABLE 97
Intercorrelation Between Secondary Student Achievement and
Average Daily Attendance and Learning Environment Inventory Factors
(Secondary Schools, N=10)

	LEARNING ENVIRONMENT INVENTORY FACTORS														
Tests of Academic Progress	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Reading	-.31	.43	-.49	.58	-.51	.35	-.71*	.62	.93*	.65*	.58	.46	.61	-.86*	-.55
Math	-.34	.41	-.53	.60	-.53	.29	-.74*	.60	.89*	-.65*	.58	.48	.62	-.85*	-.61
School Average Daily Attendance	.73*	.72*	.44	-.40	.59	.03	.46	.20	.12	.54	-.04	.16	-.48	.32	.41

*Correlation significantly different from zero, $p < .05$

3½ times as much variance in student achievement as the Cohesiveness scale, and thus, is considered the better scale for prediction purposes.

In comparing data from Tables 96 and 97, some similarities between elementary and secondary students perceptions of school climate/learning environment and student achievement exist. Secondary students' perception of a somewhat loosely organized (14, Disorganization), less goal directed (7, Goal Direction), but challenging (9, Difficulty) atmosphere, tends to be rather strongly associated with student achievement as measured by the Tests of Academic Progress. Of interest when comparing the two samples, is the magnitude and direction of the Difficulty/ student achievement correlations. Apparently secondary students perception of the learning environment as more difficult is associated with higher student achievement. For elementary students, the trend is reversed.

Another interesting finding for the secondary schools was the significant positive correlation between LEI scale 10 (Apathy) and Reading, and the negative correlation between Apathy and Math. Such a finding may suggest something about the differential attitudes of high and low achieving students in Math and Reading and their relative perceptions of the amount of Apathy in the general learning environment. High perceived apathy is positively associated with high reading achievement, and negatively associated with achievement in math for these schools. An additional variable possibly useful in explaining these data is the different instructional approaches teachers take to these two subjects.

An additional finding of interest for the secondary schools (Table 97) is the intercorrelation between the LEI scales of Intimacy (1) and Diversity (2) and average daily attendance. Apparently, for this sample, students perception of a school environment as offering warm relationships with others, and providing a multitude of activities and academic

opportunities that match student interests is rather highly, and positively related to average daily attendance. When considering adolescent enjoyment of the school environment as a factor in fostering good school attendance, these scales and their correlations seem quite logical.

In summary, it appears that students perception of a general school learning environment characterized by an easygoing, unpressured, somewhat structured, diverse and warm atmosphere, makes the greatest contribution to student learning as measured by standardized achievement tests. In addition, student achievement for both elementary and secondary schools seems predictable from students' assessment of the relative easiness (elementary) or difficulty (secondary) of the school environment.

SUPPLEMENTAL ANALYSES: INTERCORRELATIONS WITHIN CLASSES OF VARIABLES IN THE GEORGIA PRINCIPAL ASSESSMENT SYSTEM

Data reported in this section of the report describe supplemental analyses of the relationships between Input/Input, Mediating/Mediating, and Outcome/Outcome variables. While these analyses are not directly a part of the validation of principal competencies and performance indicators, they serve to provide information meaningful for interpreting instrumentation used in the validation process. In addition, descriptions of the inter-relationships between G.P.A.S. variables can facilitate conclusions and recommendations provided in other sections of this report.

Relationships Between Input Variables: Various Principal Performance Description Survey (PPDS) Forms

It will be recalled that Input variables within the G.P.A.S. consisted of three instruments containing principal competencies and performance indicators

that were rated in terms of frequency and effectiveness with which a given principal performed a particular item, by students, teachers and the principal himself. In addition, a fourth input variable was the PPDS-External Observer Form, which scored principal competencies on the basis of a product scale. An examination of the interrelationship between these input measures should provide corroboration of hypothesized lack of content congruence from different data sources. The many intercorrelations computed between various PPDS form items and composites are far too numerous to report here; however, some data will be described to provide the reader with the flavor of relationships between these input sources. Table 98 presents the number and percent of PPDS-Teacher Form items significantly correlated with the PPDS-EO instrument composites for both frequency and effectiveness ratings. The table total percentages for Administrative Operations and Functional Areas composites indicate some commonality between the two PPDS forms. Among the Administrative Operations for the EO inventory, the composites of Decison-Making and Evaluating show the strongest relationship with the PPDS-Teacher Form items. Apparently teachers' ratings of the frequency and effectiveness with which principals carry out a wide variety of competencies are moderately related to principals' scores on items corresponding to these EO composites. These data may point to the importance of these Administrative Operations as sources of corroborative observable evidence for teachers' ratings of principal competencies.

The total percentages for the EO-PPDS Functional Areas composites/ Teacher-PPDS items are somewhat less strong than those for Administrative Operations. However, the Functional Areas of Staff Personnel and Fiscal Management are considerably above the table totals for both the frequency and effectiveness scales. The largest percentage of significant correlations is

TABLE 98
Frequency of Significant Correlations ($p < .05$) Between
PPDS - External Observer Form Composites (Product Scores) and
PPDS - Teacher Form Items (N=44)[1]

E.O. Form Composites	PPDS - Teacher Form Item Ratings		% of Maximum Possible[3]	
Administrative Operations	Frequency	Effectiveness	Frequency	Effectiveness
Data Collection (19)[2]	21	5	17.9	4.3
Planning (37)	14	9	11.9	7.7
Communicating (2)	5	2	4.3	1.7
Decision-Making (42)	32	54	27.4	38.5
Implementing (24)	1	1	0.9	0.9
Evaluating (31)	50	48	42.7	41.0
TOTAL	123	119	17.5	17.0
Functional Areas of Responsibility				
Curriculum and Instruction (35)	14	2	11.9	1.7
Staff Personnel (12)	29	63	24.8	53.8
Pupil Personnel (29)	9	3	7.7	2.6
Support Management (3)	3	0	2.6	0.0
School Community Interface (3)	1	2	0.9	1.7
Fiscal Management (44)	25	42	21.4	35.9
System-Wide Policies and Operations (29)	23	17	19.7	14.5
TOTAL	104	129	12.7	15.8

[1] Based on 45 principals and 1200 teachers using composite means as the sampling unit
[2] Number of items in composite
[3] Maximum possible number of correlations = 117 (Individual), 702 (Total for Administrative Operations), 819 (Total for Functional Areas of Responsibility)

for the Staff Personnel composite for the effectiveness ratings of the PPDS-Teacher Form (53.8%). These data indicate that over half of the possible Teacher-PPDS items significantly correlated with principals' product scores on competencies comprising the EO Staff Personnel composite. This may point to the importance of the EO Staff Personnel composite as a source of performance products usable in corroborating teachers' assessments of a wide variety of principal performances. A simpler interpretation of these data is that princpals rated relatively high by teachers in a wide variety of performance areas have available observable evidence indicating that Staff Personnel kinds of competencies have been performed in the school.

Another interesting analysis between PPDS-Form composite correlations is that between the PPDS-EO and PPDS-Principal Forms. These analyses are not tabled for this report owing to the scarcity of significant correlations. Of 169 possible intercorrelations between the PPDS-Principal and PPDS-EO Form composites, only two reached statistical significance, and these are interpreted as chance effects. These data indicate that for the total school sample in this study, little or no relationship exists between the PPDS-EO and PPDS-Principal Forms. This finding seemingly implies that principals' ratings of their own competencies in a variety of Administrative Operations and Functional Areas of Responsibility have little in common with scores derived from the EO product scale. These results are partially attributed to the lack of variability between principals in their ratings, and their overall high self-rating scores. Apparently principals' relatively high self-ratings in various competency areas was not corroborated by observable products when administering the EO-PPDS instrument.

As with the PPDS-EO and Principal Forms composite intercorrelations, little or no relationship existed between the PPDS-Teacher and Principal

Forms composites. For the total school sample, none of the 143 possible intercorrelations reached statistical significance. An interpretation given for the EO and Principal-PPDS composite intercorrelations seems in order, with the implication being that teachers' ratings of principals' competencies have little in common with principals' self-ratings.

Tables 99, 100, 101, and 102 present the intercorrelations between PPDS-Student Form items and PPDS-Principal Form composites for elementary schools. The tables represent all possible intercorrelations between the frequency and effectiveness ratings for the two PPDS Forms. Of 364 possible intercorrelations presented in Table 99 and 100, only two were statistically significant, indicating little or no relationship between these PPDS-Student Form item/PPDS-Principal Form composites. Tables 101 and 102 present the intercorrelations between PPDS-Student Form items and PPDS-Principal Form composites for elementary schools for the effectiveness-effectiveness, and effectiveness-frequency ratings respectively. The only interpretable cluster of correlations apparent in Table 101 is that for PPDS-Student Form item number 12 ("My principal goes to school activities"). Elementary students ratings of the effectiveness with which they perceive their principal as performing this activity is moderately and positively associated with principals' self-ratings of items comprising the Fiscal Management, System Wide Policies and Operations, Support Management, Planning and Data Collection composites for effectiveness. When comparing students' effectiveness ratings for item 12 to principals' frequency ratings (Table 102), seven of a possible thirteen item/composite intercorrelations were significant for Student-PPDS item 12. If anything, these findings seem to simply imply that principals' rating themselves relatively high in various competency areas (frequency of performance) are seen by students as frequently and effectively involved in the elementary schools' student activities program.

TABLE 99
Intercorrelation Between PPDS - Student Form Items (Frequency Rating)
and PPDS - Principal Form Composites (Frequency Rating)
(Elementary Schools, N=35)

Principal PPDS Composites	Student PPDS Items ("How Often")													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	-.03	.13	.00	.21	-.06	.28	.13	.09	.14	.02	-.03	-.07	-.16	.32
Planning (49)	-.14	.08	-.05	.21	-.21	.22	-.06	.01	.07	.04	-.08	-.09	-.28	.22
Communicating (101)	-.05	.13	.00	.22	-.12	.27	.06	.05	.13	.07	-.03	-.07	-.22	.30
Decision Making (46)	-.14	.13	-.02	.22	-.18	.28	.04	.03	.11	.02	-.04	-.08	-.18	.32
Implementing (64)	-.09	.05	-.02	.18	-.11	.27	.02	-.02	.11	.08	.07	-.23	-.17	.25
Evaluating (40)	-.18	.02	-.09	.18	-.19	.23	-.02	-.05	.06	-.02	-.06	-.12	-.25	.26
Functional Areas of Responsibility														
Curriculum and Instruction (74)	-.11	.10	-.04	.24	-.10	.27	-.06	-.02	.13	.02	.01	-.09	-.16	.28
Staff Personnel (56)	-.03	.10	.06	.26	-.09	.28	.11	.02	.18	.09	-.02	-.12	-.16	.31
Pupil Personnel (66)	-.03	.23	-.02	.18	-.11	.32	.08	.10	.12	.08	.04	-.06	-.12	.26
Support Management (8)	-.15	.05	-.01	.20	-.08	.27	-.08	.14	.06	-.05	-.10	-.25	.24	.23
School Community Interface (7)	-.13	.15	-.01	.16	-.09	.23	.03	-.10	.13	-.00	.01	-.01	-.17	.33*
Fiscal Management (74)	-.17	-.01	-.06	.16	-.23	.19	-.08	-.02	.04	.02	-.17	-.12	.30	.23
System Wide Policies and Operations (53)	-.09	.08	-.04	.18	-.15	.23	.03	.02	.08	.02	-.07	-.12	-.26	.30

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 100
Intercorrelation Between PPDS - Student Form Items (Frequency Rating)
and PPDS - Principal Form Composites (Effectiveness Rating)
(Elementary Schools, N=35)

Principal PPDS Composites	Student PPDS Items ("How Often")													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	-.17	-.02	-.05	.06	-.09	.28	.14	-.04	.06	-.05	-.17	-.21	-.13	.29
Planning (49)	-.25	-.11	-.12	.06	-.24	.21	-.03	-.13	.07	-.04	-.25	-.31	-.21	.13
Communicating (101)	-.14	-.01	-.07	.05	-.15	.22	.09	.01	.06	-.08	-.20	-.17	-.17	.16
Decision Making (46)	-.24	-.04	-.10	.08	-.23	.27	.05	-.06	.04	-.11	-.19	.20	-.16	.22
Implementing (64)	-.18	-.06	-.10	.02	-.16	.28	.05	-.10	.11	-.06	-.24	-.29	-.11	.17
Evaluating (40)	-.27	-.10	-.14	.04	-.21	.24	.02	-.12	.02	-.11	-.20	-.25	-.18	.22
Functional Areas of Responsibility														
Curriculum and Instruction (74)	-.24	-.07	-.09	.15	-.13	.25	.06	-.06	.08	.08	-.11	-.21	-.13	.18
Staff Personnel (56)	-.11	.01	-.06	.09	-.14	.27	.13	-.04	.12	-.01	-.09	-.23	-.10	.20
Pupil Personnel (66)	-.12	.04	-.15	-.05	-.16	.25	.10	.04	.03	-.14	-.14	-.10	-.10	.05
Support Management (8)	-.19	.00	.02	-.04	-.09	.27	.05	.07	-.01	-.13	-.30	-.25	-.12	.19
School Community Interface (7)	-.16	.00	-.03	-.05	-.10	.17	.12	-.06	.19	-.24	-.11	-.05	-.07	.11
Fiscal Management (74)	-.30	-.15	-.13	-.02	-.30	.19	-.09	-.17	-.01	-.07	-.40*	-.28	-.26	.18
System Wide Policies and Operations (53)	-.13	-.05	-.02	.09	-.11	.23	.11	-.07	.06	-.01	-.23	-.29	-.17	.30

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 101
Intercorrelation Between PPDS - Student Form Items (Effectiveness Rating)
and PPDS - Principal Form Composites (Effectiveness Rating)
(Elementary Schools, N=35)

Principal PPDS - Composites	Student PPDS Items ("How Well")													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	-.04	.32	.01	.13	-.14	.16	.11	-.04	.00	.26	-.20	.36*	.18	-.06
Planning (49)	-.16	.17	-.12	.05	-.30	.33*	-.00	-.03	.00	.23	-.23	.37*	.13	-.09
Communicating (101)	.03	.20	-.03	.09	-.15	.21	.06	.04	.05	.17	-.17	.27	.23	.08
Decision Making (46)	-.05	.29	-.04	.10	-.25	.29	.09	.03	.02	.19	-.15	.32	.22	-.13
Implementing (64)	-.08	.26	-.07	.13	-.18	.20	.05	-.13	.06	.16	-.17	.33	.16	-.07
Evaluating (40)	-.11	.25	-.06	.06	-.26	.29	.02	.04	-.00	.28	-.16	.33	.15	-.08
Functional Areas of Responsibility														
Curriculum and Instruction (74)	-.03	.29	.01	.13	-.21	.21	-.02	.09	.08	.21	-.10	.28	.20	-.10
Staff Personnel (56)	-.05	.28	-.01	.12	-.20	.30	-.01	-.03	-.05	.26	-.11	.23	.24	-.12
Pupil Personnel (66)	.09	.31	-.06	.05	-.11	.12	.09	.06	.15	.08	-.19	.23	.26	-.12
Support Management (8)	-.06	.25	-.04	-.01	-.11	.16	.30	.21	-.02	-.27	-.29	.44*	.09	-.05
School Community Interface (7)	.04	.25	-.01	-.09	.06	.11	.20	-.03	.25	-.18	.14	.25	.36*	-.28
Fiscal Management (74)	-.21	.12	-.15	.07	-.29	.32	.08	-.20	-.06	.22	-.21	.40*	.01	.02
System Wide Policies and Operations (53)	-.05	.31	-.03	.11	-.18	.25	.06	-.06	-.03	.25	-.22	.36*	.20	-.08

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 102
Intercorrelation Between PPDS - Student Form Items (Effectiveness Rating)
and PPDS - Principal Form Composites (Frequency Rating)
(Elementary Schools, N=35)

Principal PPDS Composites	Student PPDS Items ("How Well")													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	.02	.39*	.00	.27	-.25	.20	.11	.10	.08	.19	-.23	.33	.24	-.13
Planning (49)	-.11	.24	-.08	-.22	-.40*	.32	.05	.11	.00	.26	-.23	.38*	.16	-.11
Communicating (101)	-.01	.33	-.02	.27	-.29	.21	.12	.09	.03	.20	-.20	.33	.19	-.09
Decision Making (46)	.03	.34*	.01	.26	-.33*	.31	.15	.09	.01	.22	-.12	.39*	.23	-.15
Implementing (64)	-.06	.29	-.06	.25	-.27	.20	.11	-.01	-.00	.24	-.18	.41*	.14	-.06
Evaluating (40)	-.10	.26	-.08	.21	-.39*	.31	.07	.16	.01	.29	-.19	.35*	.17	-.11
Functional Area of Responsibility														
Curriculum and Instruction (74)	-.02	.32	.00	.22	-.30	.22	.07	.11	.05	.25	-.15	.35	.23	-.15
Staff Personnel (56)	-.03	.33*	-.01	.25	-.30	.27	.08	.06	.01	.21	-.18	.38*	.22	-.11
Pupil Personnel (66)	-.03	.35*	.03	.27	-.23	.13	.18	.08	.08	.19	-.18	.33	.19	-.09
Support Management (8)	.07	.30	-.05	.28	-.32	.15	.17	.07	.10	.17	-.24	.32	.09	-.11
School Community Interface (7)	-.11	.19	.00	.29	-.24	.11	.28	.04	-.05	.29	-.29	.49*	.16	-.10
Fiscal Management (74)	-.12	.22	-.12	.25	-.39*	.32	.08	.09	-.02	.22	-.21	.37*	.10	-.04
System Wide Policies and Operations (53)	-.04	.33	-.07	.22	-.32	.30	.07	.07	-.02	.24	-.20	.33	.20	-.13

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

Of additional interest, though interpretation is somewhat difficult, are the intercorrelations in Table 102 for Principal-PPDS composites and Student-PPDS items 2 ("My principal meets with parents and children to plan what we learn in school"), and 5 ("My principal talks with children during lunch and free time"). Four of a possible 13 intercorrelations for item 2 and the PPDS-Principal Form composites (frequency rating), and four for item 5 were statistically significant. The correlations for these two items were moderate in terms of magnitude and opposite in direction. Interpretation of these correlations is difficult at best. Suffice it to say that princpals rating themselves as generally more competent (frequently and effectively carrying out a wide variety of performances) are seen by students as more effective relative to Student-PPDS item number 2, and less effective relative to Student-PPDS item number 5. In summary, little global relationships are evident between elementary students-PPDS items and principals' self-ratings, an indication that the two instruments are relatively independent.

Tables 103, 104, 105, and 106 present the intercorrelations between PPDS-Student Form items and PPDS-Principal Form composites for secondary schools. The tables represent all possible intercorrelations between the frequency and effectiveness ratings for the two PPDS forms. Though the absolute number of correlations is not large, some patterning seems to occur in Table 103 for the frequency/frequency correlations. Student-PPDS item number 14 ("When children misbehave my principal talks with them, their parents and teachers") correlates significantly with six of the possible 13 Principal-PPDS composites. These findings seem to say that low frequency ratings by students for this performance are associated with principals' high frequency ratings for the significant composites. This may indicate that principals not actively involved in discipline matters (from the students' point of view) rate

TABLE 103
Intercorrelation Between PPDS - Student Form Items (Frequency Rating)
and PPDS - Principal Form Composites (Frequency Rating)
(Secondary Schools, N=10)

Principal PPDS Composites	Student PPDS Items ("How Often")													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	.29	.58	-.08	-.04	.24	.34	.00	.26	.13	.17	.17	.35	.33	-.60
Planning (49)	.14	.39	-.29	-.17	.29	.22	-.04	.15	.16	-.10	.17	.44	.22	-.72*
Communicating (101)	.45	.64*	.04	.04	.39	.48	.07	.40	.15	.28	.25	.42	.45	-.52
Decision Making (46)	.29	.51	-.15	.02	.39	.33	.13	.26	.29	.06	.30	.58	.39	-.74*
Implementing (64)	.29	.53	-.13	-.02	.39	.36	.10	.28	.29	.08	.30	.58	.38	-.74*
Evaluating (40)	.17	.47	-.22	-.10	.24	.24	-.00	.16	.20	-.01	.16	.42	.26	-.71*
Functional Areas of Responsibility														
Curriculum and Instruction (74)	.49	.69*	.17	.16	.31	.43	.15	.36	.11	.42	.14	.31	.52	-.50
Staff Personnel (56)	.37	.58	-.07	.00	.38	.37	.12	.30	.19	.18	.26	.50	.42	-.69*
Pupil Personnel (66)	.35	.63*	-.05	-.06	.31	.41	-.03	.35	.07	.17	.15	.37	.40	-.53
Support Management (8)	-.12	.18	-.28	-.17	.01	.10	-.19	-.01	.18	-.18	.05	.08	-.11	-.39
School Community Interface (7)	-.36	-.15	-.75*	-.87*	-.35	-.28	-.82*	-.16	-.64*	-.62	-.24	-.22	-.41	-.15
Fiscal Management (74)	.21	.42	-.21	-.04	.42	.29	.13	.23	.35	-.04	.35	.61	.30	-.73*
System Wide Policies and Operations (53)	.11	.40	-.26	-.17	.20	.26	-.10	.14	.13	-.05	.14	.35	.17	-.62

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

257

TABLE 104
Intercorrelation Between PPDS - Student Form Items
(Frequency Rating) and PPDS - Principal Form Composites (Effectiveness Rating)
(Secondary Schools, N=10)

Principal PPDS Composites	Student PPDS Items ("How Often")													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	.34	.64*	-.06	-.02	.37	.44	.05	.39	.23	.10	.31	.56	.46	-.54
Planning (49)	.07	.32	-.34	.21	.33	.25	-.07	.17	.19	-.25	.22	.55	.22	-.63*
Communicating (101)	.47	.71*	.04	.06	.53	.56	.11	.53	.25	.17	.36	.63*	.59	-.47
Decision Making (46)	.26	.48	-.17	.05	.46	.38	.11	.31	.30	-.06	.36	.70*	.42	-.63*
Implementing (64)	.34	.56	-.09	.02	.53	.48	.16	.41	.39	.05	.46	.72*	.45	-.61
Evaluating (40)	.22	.49	-.16	-.02	.40	.37	.11	.27	.33	-.05	.32	.65*	.38	-.63*
Functional Area of Responsibility														
Curriculum and Instruction (74)	.49	.73*	.17	.14	.43	.50	.15	.48	.15	.29	.19	.49	.63*	-.41
Staff Personnel (56)	.43	.64*	-.04	.02	.54	.48	.14	.46	.25	.11	.38	.69*	.55	-.60
Pupil Personnel (66)	.44	.69*	.06	.07	.45	.57	.09	.49	.22	.20	.34	.58	.56	-.40
Support Management (8)	-.05	.23	-.25	-.10	.27	.37	-.05	.18	.43	-.23	.38	.48	.05	-.29
School Community Interface (7)	.29	-.10	-.76*	-.84*	-.25	-.26	-.80*	-.04	-.65*	-.62	-.24	-.18	-.33	-.06
Fiscal Management(74)	.16	.36	-.25	-.06	.43	.29	.12	.22	.39	-.14	.39	.68*	.28	-.69*
System Wide Policies and Operations (53)	.14	.42	-.25	-.16	.37	.42	-.05	.28	.25	-.14	.32	.61	.29	-.51

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

TABLE 105

Intercorrelation Between PPDS - Student Form Items
(Effectiveness Rating) and PPDS - Principal Form Composites (Effectiveness Rating)
(Secondary Schools, N=10)

Principal PPDS - Composites	Student PPDS Items ("How Well")													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	.37	.59	.27	.24	.24	.52	-.23	.23	.44	-.10	-.18	.26	.34	-.03
Planning (49)	.19	.39	.04	.05	.13	.62	-.36	.08	.36	-.21	.12	.14	.52	-.50
Communicating (101)	.51	.71*	.40	.38	.36	.57	-.31	.21	.42	-.24	.23	.15	.40	-.05
Decision-Making (46)	.38	.56	.21	.22	.31	.53	-.27	.21	.50	-.26	.03	.34	.56	-.30
Implementing (64)	.44	.61	.28	.29	.37	.45	-.31	.20	.53	-.19	.12	.18	.57	-.27
Evaluating (40)	.33	.52	.20	.19	.26	.51	-.22	.21	.46	-.20	-.05	.31	.53	-.28
Functional Area of Responsibility														
Curriculum and Instruction (74)	.47	.66*	.47	.41	.27	.59	-.23	.31	.42	.02	-.37	.30	.30	.12
Staff Personnel (56)	.48	.67*	.34	.35	.35	.57	-.39	.28	.51	-.16	.06	.26	.53	-.21
Pupil Personnel (66)	.48	.67*	.40	.36	.32	.54	-.21	.17	.56	-.15	-.26	.18	.31	.10
Support Management (8)	.17	.33	.04	-.03	.24	.15	.08	-.20	.39	-.14	-.02	-.10	.26	-.18
School-Community Interface (7)	.30	-.06	-.53	-.53	-.34	.52	-.46	-.10	-.25	.02	.24	-.26	-.37	-.25
Fiscal Management (74)	.29	.44	.11	.15	.27	.42	-.32	-.02	.48	-.21	-.05	.18	.65*	-.51
System-Wide Policies and Operations (53)	.29	.52	.14	.10	.24	.53	-.17	.55	.61	.00	.18	.19	.40	-.22

[1]Number of items in composite

*Correlation significantly different from zero, $p < .05$

TABLE 106
Intercorrelation Between PPDS - Student Form Items (Effectiveness Rating)
and PPDS - Principal Form Composites (Frequency Rating)
(Secondary Schools, N=10)

Principal PPDS Composites	Student PPDS Items ("How Well")													
Administrative Operations	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Data Collection (38)[1]	.22	.41	.19	.18	.03	.59	-.40	.20	.25	.05	-.06	.11	.31	-.13
Planning (49)	.15	.34	.04	.08	.03	.65*	-.51	.18	.24	-.08	.20	.07	.52	-.52
Communicating (101)	.35	.52	.32	.33	.15	.59	-.46	.17	.36	.02	.03	.02	.36	-.09
Decision Making (46)	.30	.47	.19	.23	.18	.57	-.43	.27	.37	-.13	.13	.24	.59	-.38
Implementing (64)	.29	.46	.19	.21	.17	.53	-.42	.24	.34	-.06	.13	.13	.52	-.34
Evaluating (40)	.16	.36	.09	.10	.02	.62	-.40	.23	.24	-.03	.02	.16	.46	-.37
Functional Area of Responsibility														
Curriculum and Instruction (74)	.33	.48	.39	.40	.08	.60	-.41	.27	.30	.09	-.17	.12	.31	.04
Staff Personnel (56)	.32	.49	.24	.26	.14	.59	-.47	.26	.34	-.05	.09	.22	.49	-.25
Pupil Personnel (66)	.28	.50	.25	.22	.07	.66*	-.41	.17	.28	.08	-.08	.08	.27	-.08
Support Management (8)	-.11	.04	-.12	-.13	-.14	.36	-.27	.05	.00	.13	.11	-.38	.19	.38
School Community Interface (7)	-.39	-.16	-.59	-.58	-.45	.57	-.47	-.20	-.21	-.09	.20	-.26	-.33	-.28
Fiscal Management (74)	.29	.42	.13	.18	.21	.48	-.43	.25	.36	-.16	.26	.13	.64*	-.50
System Wide Policies and Operations (53)	.10	.31	.04	.04	-.02	.61	-.39	.05	.22	-.02	.05	.03	.36	-.33

[1]Number of items in composite
*Correlation significantly different from zero, $p < .05$

themselves higher relative to other principals in a variety of competency areas.

In comparing Tables 103 and 104, the School Community Interface composite/Student-PPDS item correlations are interesting. This composite correlated significantly with Student-PPDS items 2, 4, 7, and 9 for frequency/frequency and frequency/effectiveness ratings respectively. These data indicate that princpals rating themselves relatively more frequently and effectively performaing School Community kinds of competencies are employed in secondary schools where students rate them as less frequently and effectively performing Student-PPDS items 2, 4, 7 and 9. In this regard, it might be mentioned that these Student-PPDS items all relate to student discipline, misbehavior, and the importance of attending school (see p. 87).

It may be that principals seeing themselves as relatively competent in School Community interface performances are found in schools with relatively fewer attendance and discipline problems as seen be students. Of additional interest in Table 104 (Student-PPDS frequency/Principal-PPDS effectiveness ratings) is item number 2 ("My principal meets with parents and children to plan what we learn in school") and its composite correlations. Apparently secondary principals ratings of their effectiveness in performing Data Collection, Communicating, Curriculum and Instruction, Staff Personnel, and Pupil Personnel kinds of competencies is positively associated with students' ratings of the frequency with which they (as principals) perform in planning various school programs. The composite labels for these intercorrelations seem to make logical sense, i.e., Fiscal Management, Support Management, etc., kinds of competencies would not seemingly be related to the content of Student-PPDS item number 2.

Student-PPDS item/Princpal-PPDS composite intercorrelations for effectiveness/effectiveness and effectiveness/frequency ratings respectively are presented in Table 105 and 106. The number of significant correlations

in these two tables for secondary students is not considered large enough or patterned enough to interpret. It is interesting to note, however, that PPDS-Student Form effectiveness ratings when compared to frequency ratings (Tables 103 and 104) yielded few significant correlations. This finding probably reflects the greater variability in PPDS-Student form item ratings for the frequency of performance judgments.

In summary, it appears that few interpretable patterns of relationships between PPDS-Student and Principal Forms exist for secondary schools, and that the overall item/composites intercorrelations demonstrate relative independence between the two instruments as input sources. In addition, the data described above and other supplemental analyses conducted indicate relative independence among the various PPDS forms as Input variables providing information about the frequency and effectiveness with which principals perform a variety of competencies and performance indicators. In the case of the EO instrument, the production of observable evidence as verification that particular competencies have been performed has little in common with the other PPDS Forms, with the exception of a few composites for the Teacher-PPDS. These findings are considered positive from both a statistical and practical standpoint, in as much as this allows for several independent contributions to the Input variable side of the G.P.A.S.

Relationships Between Mediating Variables: School Survey, My School, and Learning Environment Inventory

Table 107 presents the intercorrelations between School Survey factors (a measure of teachers' job-related attitudes) and the My School inventory (a measure of students' assessment of the general school climate) for elementary schools. Eight of the possible 70 intercorrelations for this table were statistically different from zero. The My School factor of Difficulty

TABLE 107
Correlation Between School Survey (Teacher Satisfaction) Factors
and My School (Learning Climate) Inventory Scores
(N=36, Elementary Schools)

	MY SCHOOL FACTORS[1]				
SCHOOL SURVEY FACTORS	SATISFACTION	FRICTION	COMPETITIVENESS	DIFFICULTY	COHESIVENESS
1. Administrative Practice (9)[2]	.15	.06	.05	.35*	.14
2. Professional Work Load (9)	-.08	.29	.28	.33	.05
3. Non-Professional Work Load (6)	-.07	.09	.19	.21	.00
4. Materials & Equipment (8)	.02	-.15	.01	.16	.07
5. Buildings & Facilities (7)	.38*	-.27	-.05	.08	.41*
6. Educational Effectiveness (10)	.07	.29	.19	.66*	.20
7. Evaluation of Students (10)	.14	.23	.14	.49*	.14
8. Special Services (8)	.20	-.15	.05	.28	.29
9. School/Community Interface (7)	.09	.23	.17	.30	.17
10. Supervisory Relations (10)	-.08	.14	.28	.28	.00
11. Colleague Relations (7)	.03	.21	.22	.31	.12
12. Voice in Educational Programs (8)	.03	.04	.11	.37*	.08
13. Performance & Development (10)	-.06	.09	.17	.33*	.03
14. Financial Incentives (9)	.35*	.06	.05	.07	.25

*Correlation significantly different from zero, $p < .05$
1 Due to scoring procedure applied My School Factors should be interpreted in a direction opposite that of label.
2 Number of items on scale

(read Easiness) correlated positively and significantly with five of the School Survey scales. The data are interpreted as indicating that positive attitudes of elementary teachers towards Administrative Practices (1), Educational Effectiveness (6), Evaluation of Students (7), Voice in Educational Program (12), and opportunities for professional Performance and Development (13) are generally associated with students' perception of the school climate as less difficult. The largest correlation between School Survey factors and the My School Difficulty scale was for the Educational Effectiveness dimension (r=.66). This relationship makes intuitive sense, and implies that teachers having more positive attitudes toward the educational effectiveness of the total school program exist in a school environment that students assess as generally less difficult. Except for the findings for the Difficulty scale, the School Survey and My School instruments appear to be relatively independent in terms of their ability to measure teacher and student attitudes toward the working and academic environment.

Table 108 presents the intercorrelation between factors of the School Survey and the Learning Environment Inventory for secondary schools in the sample. Only 6 of the possible number of 210 intercorrelations between these mediating variable measures were statistically significant. These are interpreted as chance effects, and appear to show no meaningful patterns in terms of distribution for the scales. Apparently the School Survey and the Learning Environment Inventory for schools in this sample are relatively independent in terms of their assessment of a variety of variables mediating the secondary school environment. It might be mentioned, however, that the sample size for secondary schools is small, and with the addition of more secondary schools to the data pool during 1975-1976, additional analyses may point to some meaningful relationships between these two measures.

TABLE 108
Intercorrelation Between School Survey Factors and
Learning Environment Inventory Factors
(Secondary Schools, N=9)

School Survey Factors	Learning Environment Inventory Factors														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Administrative Practives (9)[1]	-.43	-.09	.22	.15	-.23	-.14	.11	-.27	-.03	.03	-.18	-.21	.14	.22	.45
2. Professional Work Load (9)	.19	-.06	,46	-.24	.27	-.33	.54	-.38	-.53	.46	-.38	-.17	-.36	.71*	.49
3. Non Professional Work Load (6)	.11	.04	.43	.14	.19	-.30	.48	-.20	-.39	.43	-.28	-.09	-.27	.64	.54
4. Materials and Equipment (8)	.21	-.61	-.08	-.27	.19	-.22	.15	-.45	-.70*	.04	-.34	-.37	-.27	.35	-.31
5. Buildings and Facilities (7)	-.56	-.68*	-.42	.26	-.42	.18	-.42	-.21	-.08	-.49	.03	-.37	.35	-.29	-.33
6. Educational Effectiveness (10)	-.12	.54	.16	.14	-.15	-.16	-.13	-.06	.58	-.19	-.10	.11	.16	-.22	-.10
7. Evaluation of Students (10)	-.33	.22	.15	.19	-.31	-.40	.00	-.20	.23	-.11	-.27	-.05	.24	.03	.05
8. Special Services (8)	-.39	-.54	-.06	.14	-.27	-.28	-.04	-.49	-.34	-.25	-.34	-.27	.15	.17	-.25
9. School Community Relations (7)	-.32	.44	.36	.15	-.16	-.08	.09	-.11	.46	.04	-.12	.04	.12	-.02	.49
10. Supervisory Relations (10)	-.13	.21	.46	.03	-.04	-.37	.35	-.18	-.06	.27	-.24	.05	-.03	.41	.55
11. Colleague Relations (7)	.11	.59	.23	-.02	.08	-.17	.13	.18	.24	.26	.03	.06	-.02	.15	.34
12. Voice in Educational Program (8)	-.31	.03	.39	.01	-.16	-.28	.28	-.24	-.12	.22	-.29	-.16	.09	.36	.59
13. Performance and Development (10)	.23	.34	.56	-.42	.32	-.51	.47	-.47	-.15	.43	-.57	-.37	-.35	.51	.43
14. Financial Incentives (9)	-.79*	-.05	-.33	.53	-.73*	.00	-.59	-.03	.61	-.69	.05	-.07	.70*	-.63	-.38

[1]Number of items in factor score
*Correlation significantly different from zero, $p < .05$

In summary, it appears that teachers' perception of various dimensions of their work environment and experiences have little in common with elementary and secondary students' assessment of the general learning climate and school environment.

Relationships Between Outcome Variables: Student Achievement Test Performance and School Average Daily Attendance

Intercorrelations between subtests of the standardized achievement test measures used (the Iowa Tests of Basic Skills for elementary students and Tests of Academic Progress for secondary students) were high and positive as might be expected. The range of intercorrelations between subtests, r=.92 to r=.98, indicates the presence of a general academic performance factor for these schools. As previously mentioned in earlier sections of this report, the Total Battery score for the ITBS is probably the single best achievement criterion for the elementary schools owing the the high subtest intercorrelations for this outcome measure.

An additional interesting finding was a median correlation of r=.45 between the ITBS subtests and Average Daily Attendance figures for the elementary schools. This finding may indicate that administrators are justified in their considerable efforts to maximize student attendance (for other than financial support and legal reasons) if performance on standardized tests can be considered as one of many relevant educational outcomes.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

It is difficult, if not impossible, to derive definitive conclusions from the mass of data presented in the previous chapters of this report. The previous chapters represent a summary of descriptive statistics and correlational analyses on an original data base of approximately 1,200,000 bits of information. The volume of data alone is almost overwhelming, both from a statistical analysis and an interpretive perspective. Further confounding factors such as small numbers of items for certain instrument sub-scales, and occasional small sample sizes (e.g., for the secondary school group) make specific summaries of the field test results and their practical implications difficult to synthesize. Considered in toto, however, the data do generate several conclusions related to the overall viability of the ROME Competency Classification Model, the Georgia Principal Assessment System derived from it, and the global sensitivity of the instruments used to measure and validate the principal competencies and performance indicators deemed as essential for the effective operations of schools by principals in the state of Georgia.

The investigators will attempt here to only summarize "general trends" in the data. In doing this, some ambiguity in interpreting the data patterns will, unfortunately, be introduced. The reader is referred back to the discussion of variable relationships in Chapter IV for further clarification.

To begin the overview, the reader is referred to Table 109 which contains a summary of the percent of PPDS items significantly correlated ($p < .05$) with the Mediating and Outcome variables of the G.P.A.S. Several general conclusions seem warranted when viewing these and other data presented in Chapter IV.

TABLE 109
Summary of Percent of PPDS Items Significantly Correlated
with Mediating and Outcome Variables

	MEDIATING VARIABLES					OUTCOME VARIABLES				
	School Survey			School Climate Learning Environment		Standardized Achievement Tests		Average Daily Attendance		
PPDS Form	Elementary	Secondary	Total	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	Total
STUDENT										
Frequency Rating	17	10		23	21	14	7	0	7	
Effectiveness Rating	8	8		30	29	26	7	0	29	
TEACHER										
Frequency Rating	42	28	58	8	6	16	5	2	13	32
Effectiveness Rating	64	29	71	21	4	39	1	5	22	35
PRINCIPAL										
Frequency Rating	3	7	2	10	7	4	4	3	4	6
Effectiveness Rating	5	9	6	10	4	6	1	7	8	30
EXTERNAL OBSERVER										
Product Rating	8	3	9	5	4	8	3	8	3	12

1. In general, validity for the various PPDS measures was greatest for the elementary school sample. To some extent, secondary school correlations were very high, but not sufficiently high to reach significance levels required for a rather small sample size. The data do indicate that there exist obvious differences between elementary and secondary schools with regard to the administrative competencies needed to provide effective school leadership. There probably existed nominal elementary school bias in the selection of competency indicators in the present project. Future research should help delineate school level differences between elementary and secondary principal competencies necessary for the optimal and effective operation of a school and the achievement of school objectives.
2. Ratings of the EFFECTIVENESS with which principals perform certain competencies were generally more valid than ratings of the FREQUENCY with which principals perform certain competencies.
3. Teacher ratings (as opposed to students, external observer or principal-self) of principal competencies and performance indicators were by far the most valid predictors, regardless of the nature of the criterion variables.
4. Principal self-ratings of competencies yielded little valid or meaningful results in terms of how these ratings were associated with Mediating and Outcome variables within the G.P.A.S.
5. The most predictable criterion variables were those associated with the various dimensions of the School Survey, a measure of teachers' job-related satisfaction and/or work attitudes. The next most predictable criterion variable was school Average Daily Attendance. Although close to ADA, the least predictable set of

variables was that consisting of scores from standardized achievement tests.

6. In general, Mediating variables were much more predictable from ratings of principal competence than Outcome variables.

When the PPDS items are aggregated in terms of competency "clusters" using the ROME Competency Classification Model (see Figure 1, p. 5), some interesting results were observed. A caution in this regard concerning interpretation should be expressed. The competency cluster scores derived from teachers, principals, and the External Observer are comparable only in the sense that the same classification system for competencies and performance indicators was utilized. The principal items were distributed across both the teacher and EO instruments since principals responded to all 338 items surviving the statewide verification process. The teacher and EO instrument content was, however, independent. It should also be remembered that each competency cluster contained a Frequency and an Effectiveness rating scale.

7. In general, principal competency clusters arranged by Functional Areas of Responsibility (e.g., Curriculum and Instruction) were more potent predictors of criterion variables than when an Administrative Operations framework was imposed (e.g., Planning).
8. The most valid set of Functional Area competency clusters over all was Fiscal Management, followed closely by Curriculum and Instruction, Staff Personnel, Pupil Personnel, and School Community Interface.
9. The most valid set of Administrative Operations competency clusters over all was Implementing, followed closely by Evaluating.

Several qualitative conclusions seem warranted on the basis of data thus far available and analyzed.

10. There is a general tendency for positive teacher attitudes toward the working environment and higher student test performance to be associated with students' reports of a low frequency of interaction with the principal. One might hypothesize a "student independence" factor to account for these observations, or it may be the case that in schools where teacher attitude and student achievement is high, the necessity of principal - student interaction is, in fact, minimized.

11. The above conclusion is supported by the finding that students' satisfaction with the school climate and learning environment, students' perception of school easiness and positive attitude toward lack of structure is also associated with student reports of a low frequency of interaction with the principal.

12. Teachers see a majority of the dimensions of their work environment to be positively impacted by the effectiveness with which the principal accomplishes and performs a variety of competencies.

A number of results not related to the primary competency validation focus of the project are also of interest.

13. The number of items in a given competency cluster, given a minimum number of three, does not appear to drastically influence predictive validity. This finding may have implications for reducing the total number of items comprising various PPDS-Form composites in future development of the G.P.A.S.

14. The School Survey instrument showed a very high relationship over all to elementary student test performance, and to Average Daily Attendance for the TOTAL sample.

15. Elementary and secondary students' perception of school climate and learning environment showed a moderate relationship with student performance on standardized achievement tests.

16. PPDS-Forms (Input variables), whether treated in item or "composite" form, were relatively uncorrelated, a finding which suggests instrument and scale independence, and further lack of corroboration for the validity of principals' self-ratings.
17. A strong general or "global" academic performance factor is present in the Outcome variable of standardized test performance. In addition moderately strong relationships exist between student test performance and school Average Daily Attendance.

In summary what implications from the available data and data analyses can be drawn concerning the general viability of the Georgia Principal Assessment System that point to potentially fruitful directions for future research? It is apparent that if a school, school system or State Department of Education is concerned with assessing competencies of principals with regard to teacher job satisfaction and school average daily attendance, competency EFFECTIVENESS ratings by teachers constitute the best single source data among those examined here. With regard to school climate/learning environment and student performance on standardized tests, the ratings of an External Observer seem the best data source, if the items are aggregated by the Functional Areas of Responsibility categories of the G.P.A.S. competency classification system. In addition, the EO instrument appears to be a viable source of directly observable performance products useful in corroborating principal competency ratings by other sources, particularly by teachers in the Functional Areas of Staff Personnel, Fiscal Management, and Curriculum and Instruction.

Further evidence in support of the theoretical rationale undergirding the G.P.A.S. can be seen in the data included in Figure 3. The data summarized here, in the form of average percent of significant correlations, provide empirical support for the hypothesized directional relationships between the classes of variables in the G.P.A.S. design. Viewing the figure, it can be

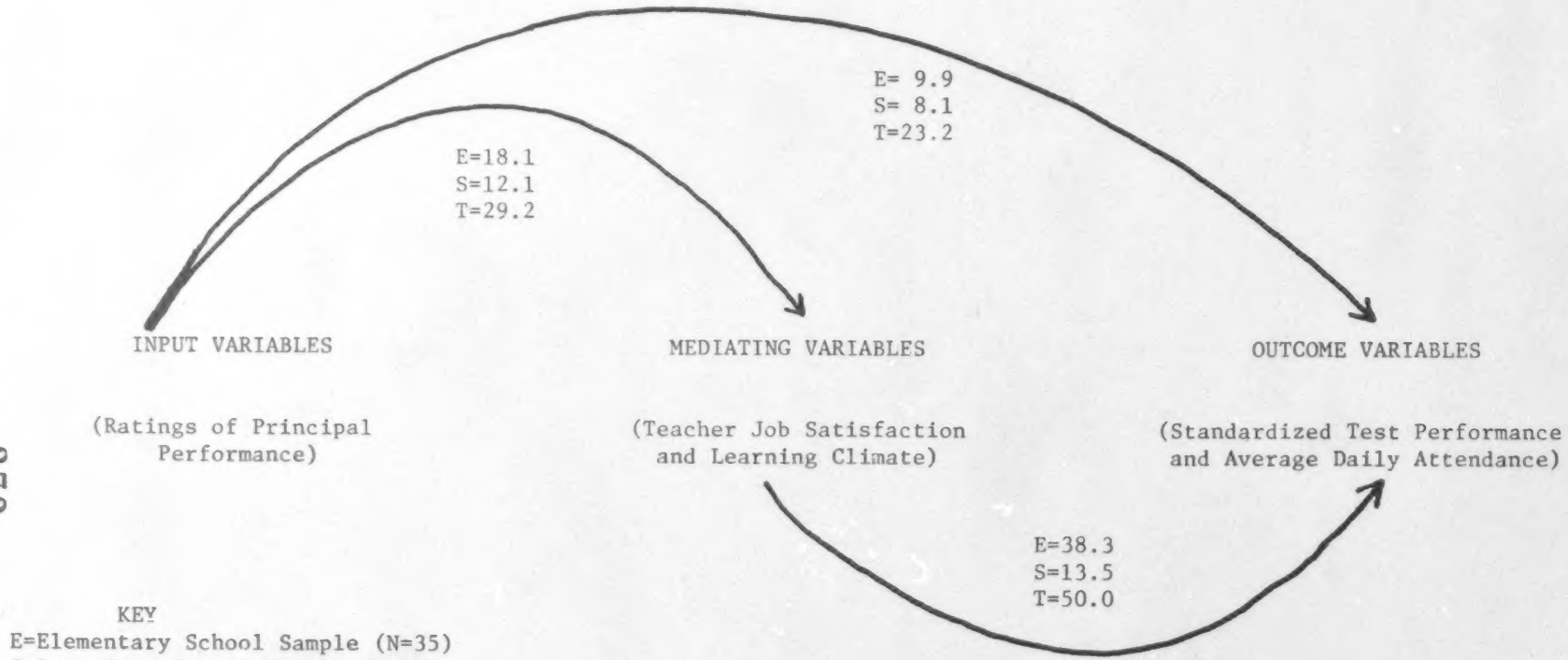

Figure 3. Summary of Empirical Relationships Among Variables in the Georgia Principal Assessment System (Average % of Significant Correlations)

seen that in all cases (a) significant INPUT/MEDIATING variable correlations occurred with greater frequency than INPUT/OUTCOME variable correlations, and (b) MEDIATING/OUTCOME correlations occurred with greater frequency than INPUT/MEDIATING correlations. These directional relationships were all hypothesized prior to instrument development, data collection, and data analysis.

It was unfortunate that time and monies did not allow for the complete explication and collection of data relative to additionally important data sources specified in the G.P.A.S. Future analyses and field testing will hopefully allow for the collection of information from school superintendents, other central office personnel, and members of the school community, particularly parents.

With regard to future research via Project R.O.M.E., the need to examine factors contributing to differences in administrative competencies for elementary and secondary principals is evident. As the secondary school sample increases in size during the 1975 - 1976 project year, analyses useful in assessing school level differences can be undertaken. In addition, the need to explore the validity of competencies and competency indicators not touched in the present field testing of the G.P.A.S. seems mandatory. It will be remembered that 338 of 885 competency statements survived the statewide "verification" survey with principals throughout the state of Georgia, all of which were classified into various input sources within the G.P.A.S. It may be that the remaining 547 competencies and indicators are fruitful ground for future research. Preliminary validation data on a selected number of these remaining items will be undertaken during the 1975 - 1976 project year with the addition of new schools to the sample.

On the data analysis side, much work remains to be done in sifting the already existing data through the application of more sophisticated multivariate statistical procedures. While the analyses undertaken in this report are considered appropriate for a first attempt at large scale validation, more sophisticated statistical analyses of the data could serve to generate more "faith" in the results. In this vein, the need to expand the data base in terms of the number of school units also exists.

As the sample size increases, some revision of instrumentation within the G.P.A.S. design seems in order. The various PPDS forms might, for example, be reduced in terms of the number of items in order to establish a "best predicting" set of Input variables. In addition, Mediating variables (school climate/learning environment and teacher work satisfaction indices) used can possible be reduced in terms of the number of scales based on correlations with PPDS item and composite ratings. This would allow for a simplification of the G.P.A.S. in terms of the total number of variables within the design.

As the project procedes in the future, some consideration to a comparison of "high quality" to "low quality" schools should probably be given, in order to further delineate principal competencies necessary to maintain "optimally" functioning school programs. For these analyses, schools might be selected on the basis of descriptive variables such as per pupil expenditure, the degree to which state standards are met, etc. This approach seems like a logical step in establishing the "ecological" validity of principal competencies and performance indicators that have been validated agains meaningful outcome measures.

It will be recalled that the ultimate goal of the Georgia Principal Assessment System developed within Project R.O.M.E. was to formulate a set of practically administered procedures which would measure a validated set of competencies that have been demonstrated through research to be related to meaningful school outcome measures. Data summarized in this first field test report indicate that the goal is, with additional efforts, within reach. Certainly, in terms of the time required to administer the assessment system in a school, the G.P.A.S. is practical. With an increase in the data base, and the application of additional statistical techniques to item selection, a packaged, validated, competency-based assessment system for use in Georgia's schools can most probably be made available.

One indication of the immediate utility of the G.P.A.S. for the competency-based training of school principals is the F.O.C.U.S. (Field-Oriented Competency Utilization System) training program for principals now being implemented through the Department of Educational Administration at Valdosta State College, Valdosta, Georgia. This unique program is being largely structured around pretest data derived from administration of the G.P.A.S. in participating principals' schools. A spring 1976 postest with the G.P.A.S. will hopefully provide data relevant for assessing the impact of the training program in terms of increasing participants competencies, and in solving school problems.

It is obvious that roles and responsibilities of a public school principal are varied and complex. Given the problems and concerns faced by an ever-changing contemporary society the contributions that an educational leader can provide are significant. Research concerned with factors related to the

effective training of and performance by local building administrators in our schools is therefore critical. Much has been accomplished to develop a competency-based assessment system in Project R.O.M.E., but a great deal has yet to be done.

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